JAN 21 1937

PAPER TRADE JOURNAL

Vol. CIV JANUARY 7, 1937 No. 1

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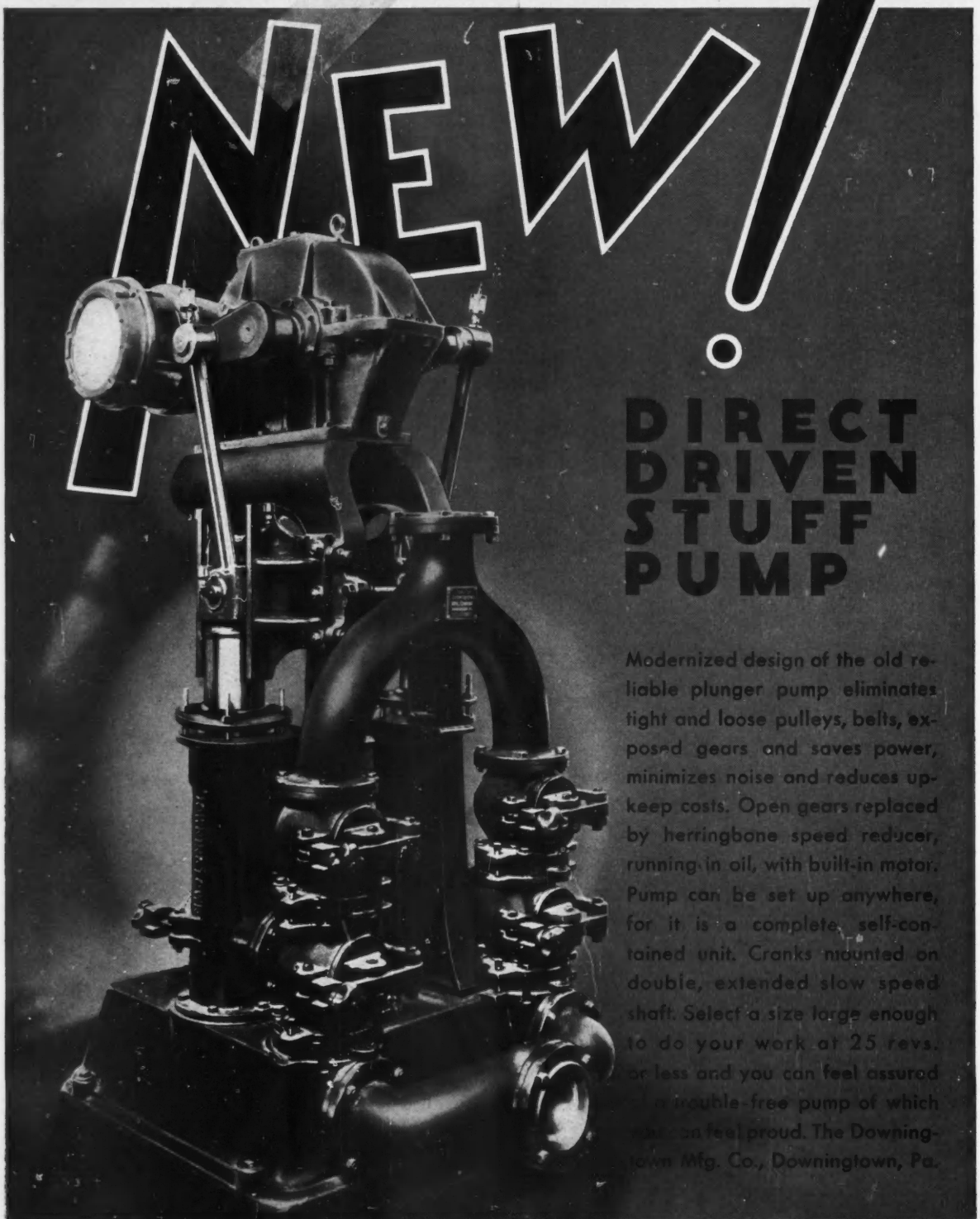
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C. Eng. Lit.
Chem. Eng.

PAPER TRADE JOURNAL

ESTABLISHED 1872

SIXTY-FIFTH YEAR

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

Published Every Thursday by the LOCKWOOD TRADE JOURNAL CO., Inc.

GEO. S. MACDONALD, President — JOSEPH P. HORGAN, Secretary

Published at 34 No. Crystal St., East Stroudsburg, Pa.
Executive and Editorial Offices: 15 West 47th Street, New York
Chicago Office: 123 West Madison St.

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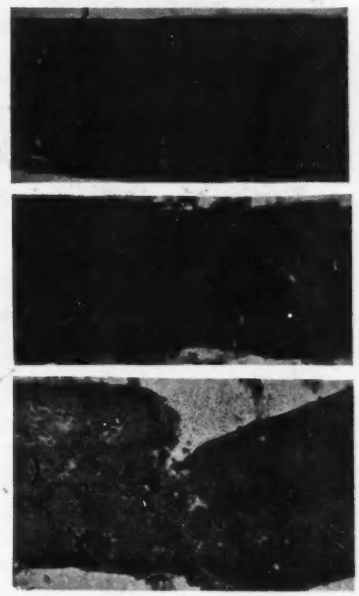

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with PAPER TRADE JOURNAL.
Vol. CIV, No. 1
Thursday, January 7, 1937
Established Sept. 21, 1910
Consolidated Feb. 19, 1925
with PAPER TRADE JOURNAL.

Prospect for Wisconsin Paper Industry Bright

Outlook for 1937 Regarded Best Since Peak Year of 1930 by Executives of Leading Paper Mills—With Improved Prices Now In Effect, Much Better Financial Showing Is Expected—Production Will Approach Capacity.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., January 4, 1937.—Executives of leading paper mills in Wisconsin find the prospects for 1937 are the best since the peak year of 1930. While substantial gains were made in 1936 in production, profits did not quite measure up because of the price structure. With improved prices in effect in many lines late this fall, a much better financial showing is anticipated. Production will be nearer to full capacity than for some time, they believe.

Mills of the Fox River Valley have averaged 90 per cent of capacity, and the officials look for a rate equal to 96 to 98 per cent as a minimum.

Consolidated Water Power & Paper Co.

Consolidated Water Power and Paper Company mills at Wisconsin Rapids, Stevens Point, Biron and Appleton have generally been running at 75 per cent of standard production, according to George W. Mead, president.

"While prices have not yet risen much and consequently profits have been kept low," says Mr. Mead, "we have hopes that they will go up in the near future. It will be necessary in order to meet increased production costs caused by unemployment compensation, social security and the general upward trend of manufacturing costs.

"During the summer months production was slack, but since October 1 it has picked up enough to warrant the belief that prosperity is again in sight for this industry, which was among the hardest hit by the depression."

A slight increase in payrolls occurred during 1936, but the trend during the coming year will depend largely upon anticipated expansion of production, Mr. Mead declared.

Marathon Paper Mills Co.

Net profits of the Marathon Paper Mills Company, with plants at Rothschild, Wausau, Ashland and Menasha, Wis., were $482,111 for the fiscal year ending October 31, according to reports made at the annual meeting of stockholders in December. Earnings were equal to $2.23 a share on common stock, and are more than twice those of 1935, according to P. M. Wilson, secretary and treasurer, excluding the payment of $36,000 in regular dividends on preferred stock. The 1935 profit was $236,000, equal to $1 per share on common stock. Sales during the last fiscal year were reported up 7.4 per cent over the preceding year.

D. C. Everest, vice-president and general manager, announced plans under consideration for the construction of a $300,000 addition to the company's carton and wax wrapping division at Menasha. The company has started construction of a plant at Rothschild to cost $125,000 for the manufacture of synthetic vanilla. It will utilize some of the reclaimed chemicals from its $275,000 plant built last year to reclaim sulphite liquor waste. Six lots were purchased from the H. H. Plummer Company at Menasha, adjacent to the present plant, for the expansion program.

Officers and directors were reelected as follows: President, C. C. Yawkey; vice-presidents, D. C. Everest and John Stevens, Jr.; secretary and treasurer, P. M. Wilson; assistant secretary and treasurer, A. M. Van Douser. The additional directors are Ben Alexander, Walter H. Bissell, Jr., C. S. Gilbert, M. P. McCullough and Charles J. Winton. Mr. Winton is from Minneapolis.

Allis Chalmers Mfg. Co.

Increased business and more favorable earnings have made it possible for the Allis-Chalmers Manufacturing Company, Milwaukee, Wis., to increase wages of hourly employees three cents an hour, and piece work prices five per cent. Those on night shifts will receive in addition a differential bonus based on straight time rates equivalent to two cents an hour. Employees were paid a three per cent bonus in December, and another one will be paid in 1937, according to Max W. Babb, president. The vacation with pay plan inaugurated in 1936 will be continued. The wage increase affects approximately 9,000 employees, and will total more than $1,000,000.

Appleton Woolen Mills

A Christmas bonus of six per cent of their annual wages was paid to 110 employees of Appleton Woolen Mills, Appleton, Wis. Employees of the Wisconsin Michigan Power Company numbering 375 received a bonus of 2½ per cent of annual earnings. J. W. Hewitt Machine Company, Neenah, Wis., paid a Christmas bonus of one week's salary. Announcement was made at a dinner tendered employees at Valley Inn at Neenah.

Nekoosa-Edwards Paper Co.

John E. Alexander, president of the Nekoosa-Edwards Paper Company, Nekoosa, Wis., finds improvement re-

(Continued on page 30)

Outlook for Canadian Newsprint Encouraging

Following Marvelous Recovery During Past Twelve Months, Industry Enters New Year With Still Better Prospects Ahead—Increase of $1.50 Per Ton Over Preceding Year on Newsprint Contract Quotations, Now Effective.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., January 2, 1937.—After a year in which the newsprint industry has staged a marvelous recovery and established an all-time record for production, the industry enters upon a new year with still better prospects ahead, not the least of which is a rise in the contract price as from January 1 from the base of $41 per ton f.o.b. New York to $42.50 per ton. The price quoted to papers here is $39.00 per ton f.o.b. mill, which is equivalent to the price quoted f.o.b. New York. This, on the basis of a 3,000,000 ton output for the year, should bring in an added revenue of between four and five million dollars, but against this is the fact that expenses have increased, particularly in respect to woods operations.

Pulp and Paper Convention

Arrangements are under way for the annual convention of the Canadian Pulp and Paper Association, to be held here January 27 to 30. In this connection there is to be a pulp and paper and engineering exhibition in the Sun Life Building, at which a comprehensive display of products and machinery is expected.

Price Bros. Assets for Sale

The long-standing and complicated situation in respect to the bankrupt firm, Price Bros. & Co., one of the largest newsprint and lumber concerns on the continent, has at last been brought to a head by the publication of a formal notice announcing a proposed judicial sale of the company's property and assets. The notice is given by the Montreal Trust Company, trustee for the company's bondholders. Sale of the mortgaged assets is scheduled for Wednesday, February 3, in room 614, 51 Place d'Armes, Montreal, the trust company's offices. The notice states that the security constituted by the trust deed having become enforceable and the company having failed to pay to the trustees, on demand, the principal, premium and interest due on the bonds, as declared due and payable by the trustee, the latter, on the request of holders of more than 25 per cent par value of the bonds outstanding, is acting in accordance with the trust deed's provisions.

This means that as a result of disagreement between the Trustee-in-Bankruptcy and Pacona, Ltd., holders of practically all of the company's bonds, there has been a breakdown (temporarily, say some of the papers here) in the negotiations working for a re-organization on amicable lines. The Hon. Gordon W. Scott, the trustee-in-bankruptcy, has made public letters sent by him to Pacona, Ltd., and to the Montreal Trust Company, and from these it appears that negotiations have broken off on three points:

(1) Pacona, through the trustee for the bondholders, demanded payment in gold or its equivalent.

(2) Pacona demanded a premium of 7½ per cent, while Mr. Scott claimed that the premium should be 4½ per cent.

(3) Saguenay Power Company notified Price Bros. & Co., Ltd., that the power contract was at an end and demanded higher prices for power.

Letter to Trustee

Following is the Hon. Mr. Scott's letter to the Montreal Trust Company, bondholders' trustee:

"In reply to your letter of today's date.—We have communicated with the Minister of Finance and with the governor of the Bank of Canada, in an effort to obtain gold coin, but were unsuccessful. They informed us that gold was not available for payment of obligations in Canada.

"With respect to the amount of premium.—We are advised that 4½ per cent is the correct rate, whereas you interpret the trust deed as entitling you to 7½ per cent premium. We are prepared to deposit the difference between 4½ per cent and 7½ per cent with you to be held in escrow pending a decision. This can be obtained either by arbitration or putting a stated case before the courts. We bind ourselves to pay in accordance with such decision. In short, we wish to pay what is due—no more and no less."

Offer to Pacona

Hon. Mr. Scott's letter to Pacona, Limited, outlining his offer, follows, in part:

"Acting in my capacity of trustee of the property of Price Bros. & Co., Ltd., in bankruptcy, I offer to purchase from you $10,788,400 par value of Price Bros. 20-year 6% Bonds, which we understand constitute your total holdings, at par plus accrued interest to date of delivery, plus such other amounts as may be due thereon under the terms of the Trust Deed securing the issue other than payment in gold. As to the premium payable on redemption prior to maturity our legal advisers inform us the rate is 4½%, whereas you demand 7½%, claiming that is the premium eligible under the Trust Deed. I am willing to either arbitrate or have a stated case put before the courts for adjudication and will pay in accordance with such decision and pending such decision will place the amount in dispute in escrow in order that you may be assured of payment if ultimately a decision is rendered in your favor.

"As a further condition of the purchase of said bonds, I undertake to arrange to settle and pay in due course the claim of the Saguenay Power Company, Ltd., against Price Bros. & Co., Ltd., in bankruptcy, for the sum of approximately $870,000 lawful money of Canada as aforesaid, in full and final settlement of all claims and demands to date of payment, and concurrently, I will, as suggested, procure from Consolidated Paper Company, Ltd., and deliver to Saguenay Power Company, Ltd., an undertaking or assignment authorizing the payment out of the monies accruing on the claim of the said Consolidated Paper Company, Ltd., against the said Price Bros. & Co., Ltd., of the amount of approximately $260,000 due by Consolidated Paper Company, Ltd., to the Saguenay Power Company, Ltd., for power supplied to the Port Alfred Mill of that company.

"I undertake to arrange that upon its release from bankruptcy as contemplated, Price Bros. & Co., Ltd., will agree to carry out and fulfill the power contract dated April 15, 1926, between that company and the Duke-Price Company, Ltd. (now Saguenay Power Company, Ltd.) as well as the agreements between that company and Roberval and Saguenay Railway and Saguenay Terminals, Ltd., both dated as of September 2, 1930.

(Continued on page 52)

Volume of Paper Sales Maintained In Boston

Both Fine and Coarse Paper Business Well Up to Expectations, With Another Busy Year Anticipated In Most Quarters—Mill Reports Continue Favorable Despite Slight Falling Off In Demand Due to Inventory Period.

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., January 4, 1937.—In the last month and the last week of 1936, wholesale paper business here maintained its volume exceptionally well. In some quarters where both fine and wrapping paper is handled, it was intimated that the month was well up to expectations, and that a busy year to come was anticipated. At a fine paper house it was stated that December was better than last year and a little better than November, and at another that business was better than usual for the last week of the year.

Favorable reports are also heard from the mills. One manufacturer said that he wouldn't care if he didn't receive an order until March 1, his concern has had so many. Business has been very good, in spite of the fact it has fallen off somewhat, due to the fact that inventories are under way. The demand for fancy papers for box coverings and holiday wrappings was good throughout December, and surprise is expressed at the way it has kept up. Prices continued firm. It is predicted that items already up will stay up and that those specialties like paper napkins and paper towels that have not risen, will advance.

In box board, business has held up rather well during the last week, although somewhat less active than previously.

The demand for paper stock for the last week of the year was more active than in some years, with business good, on the whole. According to a dealer, it looks like a boom in 1937.

In old papers, values remained strong, with kraft corrugated boxes rising to 1.05 @ 1.10 from .95 @ 1.00, f.o.b. Boston. In bagging, several advances took place. Foreign manila rope went up to a range of 3.00 @ 3.30 from a flat 3.00, and domestic manila rope to 3.00 @ 3.30 from 2.87½. Quotations on these grades varied, one source giving 3.00 @ 3.25 for both, and another, 3.10 @ 3.30 for foreign manila rope and 3.25 @ 3.30 for domestic manila rope. Foreign gunny No. 1 rose to 2.25 @ 2.35 from 2.20 @ 2.25, domestic rope to 2.00 @ 2.10 from 2.00 @ 2.05, scrap sisal to 2.25 @ 2.35 from 2.10 @ 2.15, scrap sisal for shredding to 2.25 @ 2.50 from 2.25 @ 2.35, heavy wool tares to 2.10 @ 2.25 from 2.00 @ 2.10, and new burlap cuttings to 2.60 @ 2.85 from 2.25 @ 2.50. All prices are f.o.b. Boston. Quotations on new and old domestic rags continued steady. In foreign rags, dark cottons advanced to 2.00 @ 2.20 from 1.95 @ 2.10, old fustians to 2.25 @ 2.35 from 2.05 @ 2.25, and new silesias to 6.00 @ 6.50 from 5.75 @ 6.00, all f.o.b. Boston.

News of the Industry

Carter, Rice & Co., Corp., will soon distribute to the New England printers a very elaborate spiral bound demonstration book, featuring Oxford coated book papers. The title of this book is, "There is a Definite Printing Purpose for Each of the Six Oxford Coated Book Papers," which the contents very aptly bears out. The pages contain many beautiful printed demonstrations on these papers. The book is also tabbed as to grade, so that the printing buyer may easily turn to each section and see the results obtainable on the particular grade he is interested in.

The Von Olker-Snell Paper Company have added to their lines Corsican Dekl-Text, made in white and six colors, two finishes and three weights, text, cover and card weights. Corsican Dekl-Text is a very attractive line in the better grade at a reasonable price, made by the Lee Paper Company, Vicksburg, Mich.

Henry L. Goodman is distributing numerous new items for the greeting card trade and new lines of paper to the box trade.

The charms of New England as a vacation land are very attractively depicted on the annual calendar of the Tileston & Hollingsworth Company, paper makers for more than 135 years, with sales office at 213 Congress street and mill in the Hyde Park district, Boston. The paper on which the calendar is printed is all Tru-Colour. The colours of the sheets seem to bear a certain appropriateness to the respective months or the nature of the picture. The scenes on the sheets are appropriate to each month, as follows:

January, ice-boating, in wove antique white; February, skiing on west side Mount Washington, text white laid; March, tobogganing, wove plate gray; April, gathering maple sugar, primrose wove antique; May, fishing, antique laid pink; June, horse-back riding in the White Mountains, wove plate light yellow; July, golfing, wove antique peach; August, yachting, light blue laid antique; September, harpooning sharks, cover yellow; October, roaming about the country side, cover orange; November, hunting moose, cover tangerine; December, snow-shoeing, rose-red.

Warren D. Thompson, of the sales staff of the Baird & Bartlett Company, box board dealers, passed the Christmas and New Year's week-ends with his family at Wolfeboro, N. H., and William F. Mann, a salesman for the same company spent last week in Richmond, Va.

Northern Paper Mills Exempt

WASHINGTON, D. C., January 6.—The Federal Securities and Exchange Commission has held that the Northern Paper Mills is exempt from the provisions of the Public Utility Company Act of 1935. In this connection the Commission has made the following official announcement;

Northern Paper Mills, a corporation organized under the laws of Wisconsin, a registered holding company, having made application for exemption pursuant to the provisions of Section 3(a) (3) of the Public Utility Holding Company Act of 1935; notice and opportunity for hearing on said application having been duly given; the record in this matter having been duly considered; and the Commission having duly made its findings therein;

It Is Ordered that said Northern Paper Mills be and it hereby is exempted from all provisions of the Public Utility Holding Company Act of 1935 that are applicable to it either because of its having heretofore filed a notification of registration under such Act or because of its ownership of outstanding voting securities of the Northern Electric Company; and it is further ordered that each company which is now a subsidiary company of said Northern Paper Mills be and it hereby is exempted from all provisions of the Act applicable to it by reason of the filing of such notification of registration as aforesaid.

Chicago Paper Industry Makes Good Progress

Various Divisions Reported In Exceptionally Sound Position to Begin New Year—Kraft Paper Displays Greatest Strength—Book and Bond Papers In Excellent Request—Newsprint and Groundwood Papers Move Freely.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., January 2, 1937.—While inventory period has kept a lot of the local jobbers busily engaged in detail work and while the holidays in general kept buyers a bit busy with their personal affairs, the local paper market nevertheless showed good progress. Orders during the past six days have been comparatively slow but volume has been holding up satisfactorily. Most of the reason for the less heavy flow of orders is ascribed to the fact that buyers just haven't been in a position to write the orders.

The markets are all reported in exceptionally sound condition to begin the New Year. Kraft continues strongest, though both bonds and books continue to make strong bids for leadership. Book paper mills are reported by local paper executives to be between six to seven weeks behind in production, while the bond mills have experienced sufficient demand to throw the mills in this field from four to six weeks in arrears in filling orders. Glassines are another product providing a further optimistic tinge to the week's reports. Groundwood markets are steady. Newsprint reports are also favorable. The board market has evidence of a strong undertone. Waste papers were comparatively dull though retaining a strong tone, particularly in the old grades of the fine papers.

Illinois Sales Tax Changes

The local paper industry has taken means to inform customers of the recent changes in the Illinois sales tax growing out of the Court decision ruling printing as nontaxable. Forty paper merchants in Chicago have coordinated their efforts in an announcement stating that the tax will be added as an expense item to merchandise sold to the user, which is not construed to be for resale purposes. The Illinois tax, because of the State Constitution, is not a direct sales tax and it is not legal to add the tax as a tax. However, in the realization that absorption of a 3 per cent charge in a markup of merchandise is a costly proceeding, retailers have agreed to openly add the tax as an expense item or on account of the sales tax expense. This has been the custom of the retail trade of the State during the past three years, is satisfactory with the State and thus provides the paper industry with a straightforward and legal method of handling the item.

Association Activities

The week of January 11 finds several important divisions of the paper industry congregating in Chicago for meetings of interest to the trade in general. The Drake and Knickerbocker Hotels, the latter only a short distance from the Drake, will house the various sessions. On January 11, Monday, the Writing Paper Manufacturers Association, Grading Committee, will hold a morning session at the Drake with Emmett Naylor, executive secretary, in charge. The Sulphite Bond members of the executive committee are to meet the morning of January 12 at the Drake while the Sulphite Bond group is scheduled to hold a group meeting during the same afternoon.

The Book Paper Manufacturers Association, executive committee, will meet at the Drake Hotel at 10:00 a.m. on January 12, preparing for a general meeting of the association also scheduled for the Drake and to be held on the morning of January 13.

The Ground Wood Paper Manufacturers Association will hold an important general meeting at the Knickerbocker Hotel, beginning at 10:00 a.m. on January 13 with Dr. E. O. Merchant in charge of the arrangements. The Kraft Paper Association executive committee congregates at the Blackstone Hotel the morning of January 14 and has scheduled a general meeting of the association for the following morning, January 15. S. M. Hudson, executive secretary, is in charge of these arrangements.

All four divisions of the paper industry are reported as expecting an unusually good attendance, optimistic over recent developments in the market and anxious to preserve a continuance of the steady development forward.

More than eighty members and guests of the Midwest Division of the Salesmen's Association of the Paper Industry, congregated in the West Room of the Hotel Sherman on December 29 to properly stage the annual Christmas party. One of the outstanding tasks of the group was to affix individual signatures to a Christmas and New Year's letter sent to Ben Babbitt, former chairman of the meetings and all 'round good fellow of the association. Mr. Babbitt is recovering rapidly from a serious operation. James H. Coy acted as the master of ceremonies at the Christmas party and did his usual effective job of leading the singing. Some effective assistance from Dana Pratt also helped to put the party over. The only entertainment was that provided by the piano duo which has featured past holiday parties. The next regular meeting of the association will be held January 11.

News of the Industry

The Swigart Paper Company last week sent out a complete new set of pages for the Swigart Price List. The catalog includes a guide to the Sample System, the volume and section numbers of the sample system being shown under the grade name in the catalog. The new stock lines listed in the catalog include vellums, books, texts, covers, announcements and specialty papers.

The Traffic Executive Association, Western Territory, is reported to have recently approved application of the reduced rate on imported and intercoastal woodpulp to Indianapolis and Lafayette, Indiana. The rate of 23 cents per 100 pounds from eastern points including Hampton Roads and Baltimore is to be published with the usual port differentials.

F. W. Cole to be Sales Manager

Fraser Industries Incorporated, of Madawaska, Me., announces the appointment of F. W. Cole to the position of sales manager of the company. The chief sales office of the concern, now located at 424 Madison avenue, New York, will be moved to the Graybar Building on or about January 20. Under Mr. Cole's direction, J. W. Conley will continue as manager of western sales, with offices in the Conway Building, 111 West Washington street, Chicago, Ill.

Ontario Paper Industry Anticipates Good Year

Demand for Newsprint Paper Expected to Increase From 20 to 30 Per Cent —Fine Paper Price Situation Shows Signs of Improvement—Statistical Position of the Paper Industry Considered Sounder Than for Some Time Past.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., January 4, 1937.—The best year which the paper trade has generally enjoyed since 1930 closed on December 31 and the coming twelve months are looked forward to with confidence and interest. The newsprint mills expect a prosperous 1937 and the demand will, it is expected, increase from twenty to thirty per cent. Canada is the largest producer of newsprint of any country in the world. One of the chief stumbling blocks to higher prices is the number of companies which are in liquidation and in the hands of receivers.

In the book and writing section there has been a very fair year but prices have not been as satisfactory as desired. It is expected, however, that the financial showing will in each case be ahead of the year previous. There is tendency for all prices on various lines to stiffen owing to the ascending quotations for raw materials. Recently No. 1 and 2 bond went up one cent and No. 3 and 4 half a cent. Blotting also advanced half a cent, bristol boards a quarter of a cent and rag manila a quarter of a cent. Collections have greatly improved and the wholesale trade is quite optimistic.

The increased turnover with most jobbers has been from ten to fifteen per cent and stocks in the hands of consumers are not large. Inventories have been kept down and fundamentally things are sounder than they have been for a long time. No one is looking for a boom, as such a condition is not desired. The after-effects are often boomerang in character and a healthy development is the soundest and most satisfactory from all points of view. Several of the mills have increased wages for 1937 from five per cent up.

News of the Industry

Canadian Wallpaper Manufacturers, Ltd., Toronto, had earnings of $1.68 per share on the combined class A and class B common on their last fiscal year. This compares with $1.87 in the preceding year. Earnings have been shown on the common stock every year through the depression with the exception of 1933. Even in times of depression a company manufacturing consumer goods like wallpaper always finds a certain amount of demand for its wares. In periods of recovery such as the present when a good deal of renovation is going on the output naturally grows. It is expected that further industrial recovery, particularly in house building and renovation, will add to the results of the company.

It is probable that the Fort William, Ont., plant of the Abitibi Power and Paper Company will resume operations during the present year. The reason is the improvement in industry and the determination of the Ontario government to revitalize forest products generally. Built at a cost of more than three million dollars some fifteen years ago, the 150 ton newsprint mill may be brought into production as a high grade rayon factory when reorganization of the affairs of the Abitibi Company affairs are completed.

W. J. Hampel, of Brantford, vice president of the National Paper Box Manufacturers' Association who, with his wife, was injured some time ago in a motor accident when their car collided with another and suffered from fractured ribs is well on the way to recovery. Mrs. Hampel, whose condition was regarded for a time as critical, is now much improved.

The Interlake Tissue Mills, Merritton, at the head of which is George Carruthers, Toronto, has just closed a very busy season and carried out several improvements. The white water system of the plant has been reconstructed and all unnecessary bends, dead ends and other handicaps to flow or for slime deposits have been eliminated.

The many friends of T. A. Weldon, vice president of Provincial Paper, Limited, Toronto, are congratulating him on attaining his eighty-third birthday which he observed on New Year's Day. He is probably the oldest, active paper man associated with the wholesale business in Canada, is enjoying good health and regularly calls on old customers. Mr. Weldon will leave at the end of the present month to spend a winter holiday in California. For over a quarter of a century he was manager of the Toronto branch of E. B. Eddy Company, of Hull, and later with the old St. Lawrence Paper Mills and, for a long period now with Provincial Paper of which his brother, I. H. Weldon, was president until his death several years ago. Mr. Weldon resides in Thorold and makes weekly trips to Toronto on business.

The annual sales conference of United Paper Mills, Ltd., Toronto and Hamilton, was held on December 30 at the Royal York Hotel when encouraging reports were presented on the operations of the past year and plans discussed for the coming one. Indications are that the trend of recovery in business will continue. R. I. Finlay, president of the company, presided and after the proceedings, a banquet was enjoyed. H. R. Finlay, vice president of the United Paper Mills, and Mrs. Finlay are spending a few weeks at Sea Island, Georgia.

Important conferences regarding the possible reallocation of the timber limits of the Abitibi Power and Paper Company, Ltd., Toronto, and the Helburn Government were held last week. The Hon. Peter Heenan, Minister of Lands and Forests for Ontario, represented the provincial administration and among those representing the bondholder of the Abitibi Company were Joseph Ripley of New York, chairman of the Abitibi bondholders, G. T. Clarkson, receiver for the company and others. The conference was not concluded and will continue during the first part of this week.

Minnesota & Ontario Changes

The Minnesota and Ontario Paper Company, with general offices at Minneapolis, announces the following changes:

H. J. Cerney, heretofore located in Kansas City, Mo., will service his territory from headquarters at Minneapolis, Minn., effective January 1.

R. O. Warner, heretofore assistant manager of merchant sales, becomes manager of merchant sales, with headquarters at Minneapolis, and Paul Joslin becomes assistant manager of merchant sales, with headquarters at Chicago, Ill.

Production of Paper for the Year 1936 Is Estimated at 12,000,000 Tons

The pulp and paper making industry in the United States has many interesting characteristics, says Louis T. Stevenson, D.C.S., in his review of the paper industry for the past year in the *Journal of Commerce*. Founded in 1690, it is one of the oldest manufacturing industries in the country. Yet in spite of its age, it may still be said to be in the expansion stage. So far as available records go it has always made notable advances from one business cycle to another. The production low of 1932 was not far from the high of the previous major cycle in 1920, and was over 50 per cent higher than the 1921 low.

The industry in 1936 has shown one of its characteristic comebacks from the bottom of the depression. The previous peak year of paper production, 1929, with a total of 11,140,000 tons, has undoubtedly been surpassed in 1936 with a total paper production estimated at about 12,000,000 tons.

The total employment in the pulp and paper industry in the United States has grown from 128,049 in 1929 to an estimated 150,000 in 1936. A low of employment came from 1931-33 at about 108,000 persons.

Among the current difficulties of the industry should be mentioned the Robinson-Patman Act. There are many convinced believers in delivered prices among paper executives. This act with its indefinite wording and heavy penalties has caused great discussion and uneasiness. It appears that the industry would welcome a clarification of the situation which would not radically disturb accepted practices and trade channels.

Should another European war develop out of the present disturbed situation, the paper industry might find itself in a serious situation so far as pulp supplies are concerned. Importations, largely from Northeastern Europe, supply about 75 per cent of the wood pulp used by non-integrated mills in the United States. American manufacturers during the World War found themselves in a precarious situation, due to the curtailment of shipments of Scandinavian pulp.

Fine Papers

Production of fine papers, which includes writing and cover papers, has shown an increase of about 15 per cent over last year. The trend for these grades over an extended period is distinctly upward. Recent moderate price advances are in line with the general trend of the industry. They do not, however, fully reflect recent increases in raw materials and other costs. The mills are currently operating close to capacity and it is not to be expected that prices will remain relatively low if the indicated strong demand is maintained.

Newsprint

Newsprint paper is not subject to import duties. The prices are therefore made in an international market.

The Canadian paper industry is the most important manufacturing industry in Canada, according to the latest available data. Newsprint paper is about 84 per cent of the total Canadian paper production. About four-fifths of it is exported to the United States. This amounts to about two-thirds of the 3,500,000 tons of newsprint consumed here in 1936. The balance of United States consumption is supplied by United States domestic production and imports from European sources.

A large part of the Canadian capacity was installed during the 1920's. The 1935 production of Canadian newsprint was substantially equal to that of the previous peak year of 1929, while 1936 has been running about 16 per cent larger than 1935. Some marginal Canadian mills are still closed, but the present non-operating capacity is limited.

The price of newsprint was so low in 1932 and 1933 that with the low volume demanded, more than 50 per cent of Canadian newsprint capacity was in receivership. During this period some Canadian governmental authorities sought to bring about higher prices of newsprint, but with indifferent success.

The recent advance in price to $42.50 a ton, together with capacity production, assures the mills much better earnings.

Resistance to price advances in this commodity is strong. Hence, it is difficult to measure in advance the effect of a tight supply situation on this market.

Book Paper

Two of the larger book paper producers are planning pulp mills in the South evidently seeking lower costs and independence from outside sources.

Book paper production has held steady at fairly high levels during 1936. For an extended period the trend had been almost level, neither advancing nor declining appreciably. Whether this is to turn now is not clear. Certainly the price advances of this year seem to be holding well, a clear indication of a strong position.

Paperboard

Paperboard is one of the fastest growing branches of the industry. It now accounts for about 45 per cent of total paper production. Practically the entire production is made on order to special sizes, depending on the size of the container necessary to carry individual products. It is subject therefore to large seasonal variation which it is difficult to iron out. A relatively large percentage of capacity is idle at times during the year. This creates situations at times which tend to softness of prices.

The packaging technique of modern distribution has developed rapidly and the total production of paperboard shows an average annual increase from 1921 to 1934 of 4.7 per cent. It follows general business conditions closely after making due allowance for the sharp upward trend of paperboard.

Dependent upon old papers for about 80 per cent of its raw material this branch of the industry generally bases its price on them. Of late this has tended to stiffen due to increases in consumption. Other factors, such as wage increases and increased cost of supplies, are also tending to higher prices.

Capacity seems not to be adequate to supply the growing demand so that price advances are to be expected.

Kraft Paper

The situation in the Kraft paper industry is most inter-

esting at the present time. Kraft paper production reached a low point in 1934. The industry has been operating on a price structure established in 1933, just before the NRA became effective. In spite of the relatively low production in 1934 these prices held and in the 1935 comeback many producers made satisfactory profits. In 1936 even better profits have been shown. There are no current published statistics on this industry, but it is believed that the consumption has increased at about 8 per cent a year on the average.

The present industry is located largely in the South, where cheap wood supplies are available. In the fall of 1936 the first unit of a rather large expansion program came into production. This expansion is planned by a number of experienced and strong companies. It is believed by those well informed that this extra production can be brought into the market without serious disturbance to the price structure, provided that general business and the consequent demand continue to improve during the next two years.

Tissue

The consumption of tissue paper is gradually increasing. There is still some overcapacity due to the fact that during the depression a number of machines which formerly made other grades were shifted to various grades of tissues. As other grades become more profitable, it is believed that some of these units will shift back and that within a year the normal increase in consumption will bring supply and demand into fairly close balance. Consumption at the present time is estimated at about 400,000 tons annually for all grades including basis 18-pound and lower weights.

Pulp Production and Imports

Production of all grades of pulp shows distinct increases over 1935, excepting bleached sulphate. This is a comparatively small factor and it has remained almost stationary. Imports of pulp have been running about 30 per cent ahead of 1935 all grades showing increases. The heaviest increase seems to be in kraft. The average value over the first eight months of this year is a trifle lower than for last year.

The diversion of bleached sulphite pulp from papermaking to the manufacture of rayon continues. The volume thus diverted is estimated at about 350,000 tons a year or seven times that of 1929.

The behavior of the pulp market indicates a tight supply position in both domestic and imported grades.

General Remarks

As fixed charges in the paper industry are characteristically heavy, due to the large investment and the slow turnover of capital, an increased production tends to reduce unit costs. The price structure has been stable with slightly rising tendencies. With an increased volume of production the result has been an increase in net returns from operations. This is shown in the reports already published by some of the leading companies. International Paper and Power Company, the largest unit in the industry, reports a net profit of $1,285,464 for the third quarter of 1936 as against a loss for the same period last year. Other producers have likewise shown great improvements in net results.

During the years from 1931 to 1935 there were practically no additions to the producing equipment of the industry. Some marginal mills were closed down, some have been reorganized and many mills have improved and speeded up their existing equipment. The year 1936 has been a change in this attitude. During the latter part of the year some new paper machines were brought into production, and there are a number of others in various stages of construction. These, together with others already announced, will add about one million tons yearly capacity to the pulp making equipment of the country and about 600,000 tons to papermaking capacity.

Production Outlook

Future sales and production of paper depend upon the course of general business. Total paper production, as already indicated, has a sharply advancing trend. It advances more sharply in fact than that of industry taken as a whole. But after making due allowances for this trend, total paper production follows very closely general industrial production as exemplified by the Federal Reserve Board's Index of Industrial Production.

With a definite rise in general business activity the corresponding rise in trend of the demand for paper has impinged on a relatively stable supply to create a situation which may develop into a sellers' market. Prices have already advanced in book papers and many other grades. Pulp prices have stiffened and spot tonnage is currently selling at $15 a ton more than the current domestic contract price. Efforts to contract for pulp supplies ahead into 1938 have developed that many European pulp mills are sold out for that period.

In line with movements in other industries labor is actively seeking higher wages. Demands have been made for 10 per cent increases. Wages seem to be definitely on the increase. So also are prices for many of the supplies entering into the cost of making paper.

With all these factors tending to higher prices and a prospective continuance at a high level of the basic demand factor of general business conditions, it is but natural to expect further advances in many paper prices in the near future. The big question for the future of the industry is how far will prices go?

Price Policies

Responsible leaders in the industry are known to oppose any approach to such paper prices as prevailed in 1920. Paper consumption has increased because paper prices in terms of other goods have been kept low. Today they are lower than at any other time in the history of the United States. Will this relation be maintained or will the industry sow the wind of high prices and later reap the whirlwind of excessive productive capacity? It is to be hoped that the more farseeing elements will prevail. Whichever in the long run does prevail the industry is apparently headed for increasing profits in the near future as a result of increased activity and higher prices.

R. C. Onkels Heads Pacific Coast Division

Members of the American Pulp and Paper Mill Superintendents' Association, Pacific Coast Division, recently elected Ray C. Onkels, former second vice chairman of the organization, as chairman for the ensuing year. Election took place at the annual convention of the Association, held in Portland, Oregon.

Mr. Onkels, the superintendent of the Westminster Paper Mills Limited at New Westminster, B. C., has spent the past thirty years in the industry, starting with the Thilmany Pulp and Paper Company at Appleton, Wis. After ten years with this company he joined the Interlake Tissue Mills at Merritton, Ont., where he was engaged for six years. A brief six months with the Paper Converting Corporation at Niagara Falls, N. Y., immediately preceded his joining the staff of the Westminster Paper Mills Limited, where he has been ever since.

pH Control and Its Relative Importance In Coloring Paper

By O. T. Chalon[1]

To obtain the desired qualities of a sheet of paper and to maintain the uniformity of the same during the run is often a real problem owing to the great number of variables that appear in the manufacturing process and unless they are kept under rigid control within a limited range, both the quality of the paper as well as the uniformity of the run are apt to vary.

With pH control it is possible to narrow down fluctuations of most variables. As the optimum pH for different variables is different, mills endeavor to adhere to a pH at which best results regarding sizing, retention of fillers, tensile strength of the paper, finish, bulk, etc., are obtained.

Due to different local conditions, different stocks and different requirements, the pH adopted as a standard for certain grades of paper in one mill, may not be suitable in another mill, even for the same grades.

Most all the pH standards of the various mills lie, as a rule, somewhere between 4.5-5.5, and as most of the optima dyestuffs lie between 4.5-6 (with the exception of a few such as Metanil Yellow—Benzo Purpurine—Chrysophenine) it would be folly to jeopardize the quality of the paper and to sacrifice production by adopting a standard pH to conform solely with the optimum pH of the dyestuff, whereby only a negligible advantage in dyeing may be gained.

It is a recognized fact that figures given as to optimum pH's of dyestuffs are really misleading and unreliable, as in the manufacturing and dyeing of paper the materials, mechanical processes and chemical processes, as well as mill conditions vary extensively. These factors have a bearing on the optimum pH's of the dyestuffs, and it would be absolutely necessary to determine for every dyestuff the optimum pH on every kind of material and on all possible combinations of the same to obtain figures that would be of actual value.

This would mean the determination of the optimum pH on all grades of bleached pulp, on unbleached pulp, on pulps produced by various cooking processes and on pulps produced from different grades and types of wood. It would further mean the determination of the optimum pH in the presence of different sizes, such as low percentage and high percentage free rosin size, paraffine size, etc.

It would further necessitate the determination of the optimum pH in the presence of the various grades of starches as well as fillers and would also require the determination of the pH on combinations of these materials.

Inasmuch as the hydration of the fibre plays an important part in the dyeing of paper, and as the consistency of the stock in the beater has a bearing on the hydration, these factors also have to be taken into consideration for each determination of the optimum pH.

There is also to be considered the rotation of adding color, size alum and filler, which have a decided effect on the coloring of paper.

Water conditions, salts and impurities of organic and inorganic nature, besides uncontrollable electro-chemical reactions of the colloids are important factors, which effect the retention or absorption of the dyestuff and therefore they cannot be overlooked in the determination of the optimum pH.

As the salt content of the water changes, the absorption of cellulose or other colloids also changes, because different salts exert different buffer action.

Even the variations as they may appear from time to time in the cooking of the pulp, and variations due to insufficient washing of the pulp, which may sometimes cause same to retain alkalies and sulphides as well as colloids, may cause variations in the degree of absorption of the dyestuff. Alkalies will require additional alum for their neutralization, which in turn raises the aluminum hydroxide content of the pulp. Sulphides exert a reducing action and when oxidized may change the shade of certain dyestuffs. The colloids present may prevent the proper absorption of the dyestuff by the fiber, or they may absorb the dyestuff giving different results than expected.

With varying temperature and salt content of the water, rosin size is precipitated in different forms, either in coarse or fine particles. Those dyestuffs which are set on the fiber by size will be dependent upon the proper size precipitation for best results. The pH required for optimum results with the dyestuffs may not be the one needed to give proper size precipitation.

Strength, formation and other physical and mechanical characteristics of the paper are determined mainly by treatment of the stock in the beaters, and it has been shown that the pH of the stock in the beaters and on the wires has a great influence on these characteristics, but no paper maker will sacrifice the characteristics of the paper to conform with the optimum pH of the dyestuff.

It further should be considered that in the dyeing of paper, as a rule, several dyestuffs are applied in one formula, dyestuffs that are often of different pH optima, and it would become necessary to figure out the average optimum based on the amounts of the various dyestuffs used in the formula, which average optimum is not necessarily the optimum for each individual dyestuff.

The foregoing may serve to illustrate that too much importance is being given to the pH optima of dyestuffs, which optima with a few exceptions, are of purely theoretical, but of no practical value.

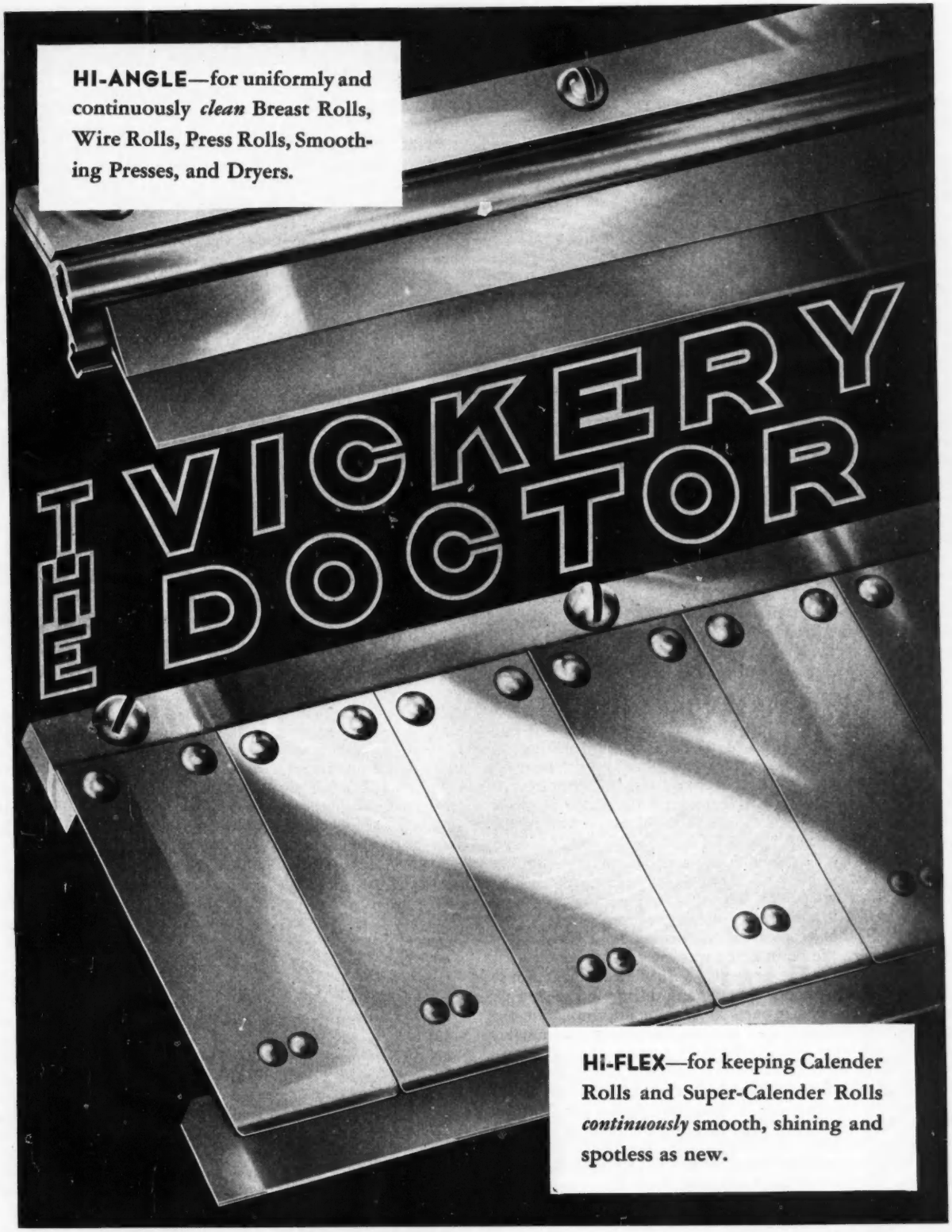
[1] Chemical Engineer, in Charge of Paper Laboratory, General Dyestuff Corp.

Government Paper Bids

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 6, 1937.—The Government Printing Office has received the following bids for 10,000 sheets of 24 x 36 white cloth lined paper; Whitaker Paper Company, at $84.75 and $109.45 per M sheets; Reese & Reese, Inc., $85.38; Mathers-Lamm Paper Company, $91.63; R. P. Andrews Paper Company, $89.00; Barton, Duer & Koch Paper Company, $109.70; and George W. Millar & Company, $87.55.

For 1,466 pounds (5200 sheets) of white sulphite index paper; Mathers-Lamm Paper Company, at 6.3 cents per pound; Whitaker Paper Company, 6.3 cents; Old Dominion Paper Company, 6.9 cents and R. P. Andrews Paper Company, 6.3 cents.


HI-ANGLE—for uniformly and continuously *clean* Breast Rolls, Wire Rolls, Press Rolls, Smoothing Presses, and Dryers.
THE VICKERY DOCTOR
HI-FLEX—for keeping Calender Rolls and Super-Calender Rolls *continuously* smooth, shining and spotless as new.

BIRD MACHINE COMPANY

SOUTH WALPOLE • MASSACHUSETTS

Inlander-Steindler Celebrate Golden Jubilee

The Inlander-Steindler Paper Company of Chicago has made announcement of the fact that it is entering 1937 with the celebration of its Fiftieth annnversary.

Tracing back the history of this very successful and aggressive institution, with its staff of forty-one salesmen, the fact is disclosed that the foundation of this business was first laid by Samuel Inlander in January of 1887, when he started to operate with a single horse and wagon from a small storeroom in a frame building located at 5207 South Ashland Avenue, at which time he carried a very limited line of candies, paper bags, twines and one or two items of wrapping paper. With the assistance in those days of Mrs. Inlander, the business developed rather rapidly and before long the candy lines were abandoned and all efforts were concentrated on paper items.

Build First Warehouse

The little storeroom soon outlived its usefulness and about three years later Mr. Inlander built his first warehouse, consisting of a brick building with a 50 foot frontage, and a basement, located at 5210 South Ashland avenue. At about this time the late Michael Steindler entered the employ of Samuel Inlander as a salesman, his territory embracing exclusively South Chicago and Hammond, Indiana.

In 1903 Albert Steindler, at the present time vice-president and treasurer of the concern, and actively engaged in its operation, entered the business and a partnership was then formed consisting of Samuel Inlander, Michael Steindler and Albert Steindler. Within a few months thereafter a branch was opened in South Chicago, consisting of a small store and a basement.

Establish Another Branch

In the latter part of 1903 a butter dish factory was purchased at Thompsonville, Mich., and after operating the same successfully for several years it was sold in order that the personnel of the concern would be better able to devote its entire line to its ever-growing paper business, which in the spring of 1904 made it necessary to establish another branch at 17 North Des Plaines street, Chicago, consisting of another small store and basement, representing a total floor area of about 1600 square feet. This space did not suffice for long, because within two years thereafter this branch was moved into new quarters built at 11-13 North Green street, consisting of a three story building where the main office was located.

Two years later the present South Chicago warehouse was built at 9216 Burley avenue, and during the same year another branch was opened at Hammond, Ind., but the ever-growing business in Hammond and surrounding territory necessitated the purchase of a warehouse in Hammond, consisting of a one story building covering a floor area of 20,000 feet with excellent track facilities, from which point business is still being carried on. In January of 1920, with the idea of stimulating employees' interest and to enable them to participate in the profits as stockholders, a corporation was formed under the name of Inlander-Steindler Paper Company.

Expand Green Street Warehouse

In 1923 as transportation facilities improved and long distance hauls, by means of the advent of motor trucks became easier, the warehouse at 5210 South Ashland avenue was discontinued and an additional two stories added to the Green street warehouse to take care of the stock and business formerly conducted from the Ashland avenue point. A year or so later Samuel Inlander, although occupying the titular head as president of the corporation, which he still retains, ceased his activities in the business and entered the real estate and banking field, leaving the active operation of the business in the hands of Michael and Albert Steindler and of Leo S. Altholz, who became associated with the company in 1915, and who has been secretary of the firm since its incorporation.

Albert Steindler and Leo Altholz

Albert Steindler is well known in the industry because of his early activities in the formation of the first Chicago Paper Association, of which he enjoys the distinction of being its first President, and is generally known as the Dean of the Paper Trade in Chicago.

Leo Altholz likewise enjoys a wide reputation by reason of his extended association activities, having held the position of president of the Chicago Paper Association for several years and of the Middle States Wrapping Paper Association for two years,—having also been active in the affairs of the National Paper Trade Association, in which he functioned as chairman of the Wrapping Paper Committee for a period of two years.

In March of 1936 a severe blow was sustained in the untimely demise of Michael Steindler, vice-president of the concern, who had, through the years of his affiliation with the Inlander-Steindler Paper Company and his contacts in the industry, became endeared to everybody with whom he had occasion to do business.

Extends Profit Sharing Plan

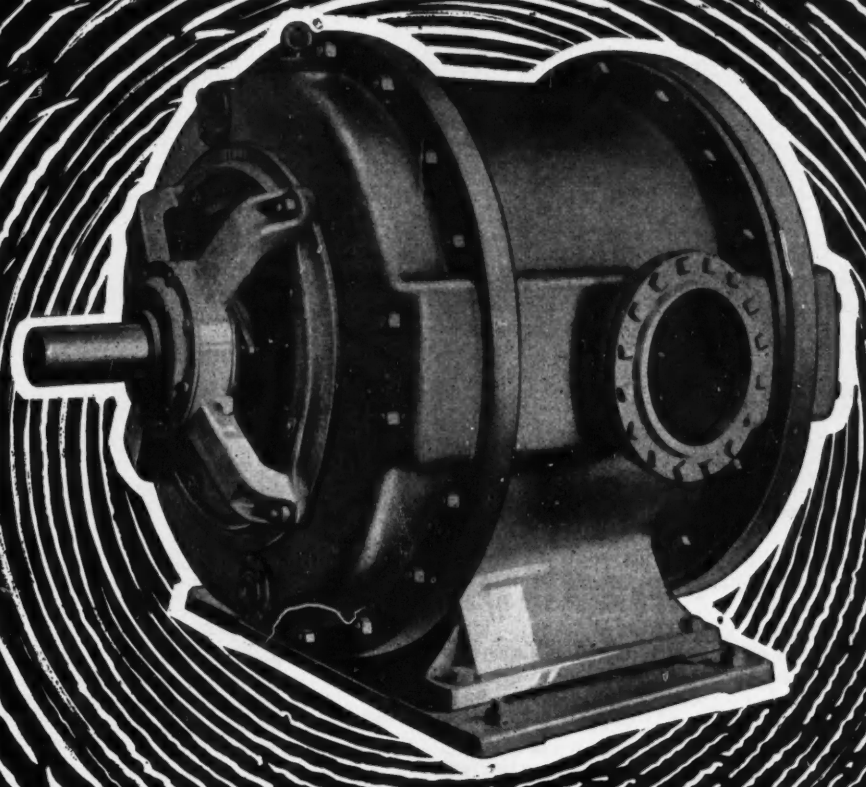
The firm at the present time occupies and owns three warehouses covering a total area of some 75,000 square feet, exclusive of space rented in other auxiliary warehouses. It operates the largest fleet of motor trucks in the City of Chicago and is still growing in measurable degree. In keeping with the spirit that has contributed to its outstanding success the firm has announced by way of commemorating its Golden Anniversary an even more extended profit-sharing plan, in which all employees will participate during 1937,—under the terms of which plan net profits realized during the current year will be divided amongst all employees in proportion to their individual earnings during the year.

U. S. Court Decides Against Importers

Four importations of paper for use in the production of blue print or brown print paper were held by the United States Customs Court to be dutiable at 20 percent in accordance with a previous test case on such paper. Even though a similar issue had been before the Customs Courts before, and decided adversely to the importers, these new cases were brought by another importer and considerable testimony taken, the Import Committee of the American Paper Industry assisting the government in combating the importers' claim. The importers claimed the paper was dutiable at 5 percent as unsensitized basic paper.

Eighteen shipments of sensitized photographic paper for use in the blue or black print processes are now before the Customs Courts on a finding by the appraisers that the merchandise was undervalued. The importing company is the same which previously lost the classification case.

Centralized Paper Mill Economy



NASH PUMPS

A thousand leading mills have found these pumps the answer to vacuum problems. Simple, efficient, and economical. One moving part, rotating without metallic contact. No pistons, no gears. Ball bearings. Increased vacuum range. These pumps set new standards for performance and economy. Ask for Bulletin No. 236.

THE NASH ENGINEERING COMPANY
SOUTH NORWALK, CONNECTICUT, U. S. A.

PROSPECT FOR WISCONSIN PAPER INDUSTRY BRIGHT

(Continued from page 19)

flected in the business of the last year. "Our business has shown enough improvement to warrant us in increasing our wage rates through our employees' organization, and in making plans for extended production during the coming year," he says.

Northern and Hoberg Paper Mills

Northern Paper Mills and the Hoberg Paper Mills, Inc., Green Bay, Wis., have announced five per cent wage increases for their employees. These affect 700 Hoberg workers and 600 Northern employees, and aggregate $100,000 per annum.

These mills had a tonnage increase of approximately 17 per cent over the 1935 level. Improvements are contemplated in anticipation of a large 1937 demand. Peak months of August and October in 1936 were the best since the 1930 level.

Paper Box Business Improves

Milwaukee's paper box manufacturers, notably Hummel & Downing Company, Kiechefer Container Company, Downing Box Company, Wisconsin Cuneo Press and the A. George Schultz Company, enjoyed increased business during 1936. Employment mounted and confidence is expressed as to prospects for the new year. The volume of increase for 1936 over 1935 is estimated from 10 to 15 per cent.

News of the Industry

Nicolet Paper Company, DePere, Wis., has been served with a complaint by the U. S. regional labor board charging discrimination against labor unions contrary to the Wagner law. The complainants are the International Brotherhood of Papermakers, and the International Brotherhood of Pulp, Sulphite and Paper Mills Workers. They charge the company has interfered with union organization, and has discharged two employees, William Verhagen and Alton Borman for union activity. A hearing is scheduled January 11 at Green Bay, Wis., before a trial examiner.

Construction is under way at Elroy, Wis., on a $100,000 plant for the Paper Makers Chemical Corporation of Kalamazoo, Mich., a subsidiary of the Hercules Powder Company of Delaware. It is being built by the dairy products division, and will manufacture dried casein and powdered whey under a new process.

Mills at Green Bay, Wis., were shut down for approximately 24 hours last week due to low water in the Fox River. A thirty-five mile gale washed water into Lake Michigan at a rate which lowered the river level two feet. The riled water was too dirty for mill use, and pumping was stopped. Ice chunks also were clogging the pumps.

In order to provide more adequate water flowage for power in the lower Fox River, one sluice gate will be kept open all winter in the dam at Neenah, Wis., according to orders issued by the district office of the War department at Milwaukee, Wis.

An informal reception was held at the close of business at the Kimberly-Clark Corporation offices at Neenah, Wis., December 29 for S. R. Stilp, chief mill manager, who retired January 1. He was employed with the company for 46 years. He was presented with a gift, and refreshments were served.

Announcement was made during the holiday week of the engagement of Edward H. Voigtman and Miss Cecille Michalkiewicz, of Neenah, Wis. Mr. Voigtman received his bachelor of science and doctor of philosophy degrees from the Institute of Paper Chemistry, and is a member of the technical staff of the Kimberly-Clark Corporation. The engagement also was announced of Andrew Loy Moore Bixler of Altoona, Pa., and Miss Bernice Baetz, of Two Rivers, Wis. Mr. Bixler is a student at the Institute of Paper Chemistry at Appleton, Wis.

To Start Malone Mill February 1

MALONE, N. Y., January 4, 1937.—United States District Judge Frederick H. Bryant having recently approved the transfer of the mills and property of the defunct Malone Paper Company to the newly formed concern known as the Malone Special Papers, Inc., headed by

GEORGE M. MCKEE, JR.

George M. McKee and his son, George M. McKee, Jr., the new corporation has taken over the property and plans to have the plant in operation about February 1. The company has installed two good used 1500 pound Dayton Beater and Hoist Company's beaters, an Imperial Jones Jordan direct connected to a 200 hp. motor and a new, latest type Downingtown rubber covered suction press roll.

Gibbs-Brower Company, Inc., paper and pulp mill brokers, 21 East 40th street, New York, were the brokers in the sale of this property.

Ward Paper Mills To Start

MERRILL, Wis., January 4, 1937.—Joseph M. Ward, who recently acquired the Grandfather Falls Paper Mills at this place, announced today the appointment of A. M. Vanderberg, of Kalamazoo, Mich., as superintendent of the plant which will be operated under the name of the Ward Paper Mills. Mr. Vanderberg has had a long and varied experience in the manufacture of paper, principally in book and sulphite mills. Machinery has been ordered for the mill and operations will be started as soon as possible.

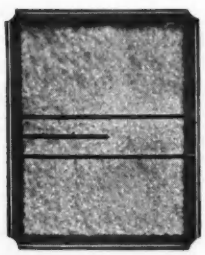
Profitable Printing Begins at the Wet End of the Paper Machine

WHETHER A SHEET OF PAPER is to be machine finished, sized and super-calendared or coated, its printing qualities are determined largely by the Wet Cylinder Felt that picks it up as it leaves the Fourdrinier wires. • By removing the excess water faster and more uniformly Hamilton Felts speed production, reduce costs and make better printing papers. Their soft, fleecy nap carries the speeding sheet securely on its way to the drying rollers yet carries it so gently that no impressions from its warp and weft mar the printing surface. • Thus printers and lithographers and their customers no less than paper manufacturers profit from the contribution of Hamilton Felts.

From the thinnest tissue to the coarsest board, there is a Hamilton Felt that will assure increased production and reduced costs

SHULER & BENNINGHOFEN, HAMILTON, OHIO

• Miami Woolen Mill, Established 1858 •



Hamilton Felts are marked by two blue lines full width of the felt and by one shorter blue line midway between them.

Hamilton Felts

Obituary

William Delano Russell

GREENFIELD, Mass., January 5, 1937.—William Delano Russell, retired paper manufacturer, died suddenly last night at his home here. He was 85 years old.

For many years prominent in the paper manufacturing industry of New England and New York, Mr. Russell had been one of the founders of the International Paper Company, of which he was vice president from 1911 until his retirement in 1922.

Mr. Russell was born in Sunderland, Mass., in December, 1851, of old Colonial stock. He was educated at Massachusetts State College, from which he graduated in 187[illegible] as a member of the first graduating class of that institution.

Shortly afterward he entered the employ of the Montague Paper Company, of Turner's Falls, Mass., of which company he eventually became treasurer.

In 1898, at the time of the founding of the International Paper Company, Mr. Russell came to New York and became auditor of the new corporation. Save for a period of some years during which he was a partner of Bulkley, Dunton & Co., his active business life was chiefly concerned in the affairs of the International and of its subsidiaries. He was a director of that company from 1910 to 1922, and a member of its executive and finance committees.

He was also a director of the Keith, Champion International and St. Croix paper companies and had considerable interest in the Lake Megantic Pulp Company and the Ryegate Paper Company.

He was at one time a trustee of the Manhattan Congregational Church, and during his residence in New York was a member of the Lotos Club and of the City Midday Club. He was also a 33rd degree Mason.

Since his retirement, Mr. Russell has lived for the most part in Greenfield, with occasional winters in New York and Camden, N. C.

He is survived by his widow Kate Shumway Russell, with whom he had only last month celebrated his 54th wedding anniversary, and by his daughter, Janet L. Russell, of Greenfield, Mass.

Rufus L. Sisson, Sr.

POTSDAM, N. Y., January 4, 1937.—Rufus Lasher Sisson, Sr., treasurer of the Racquette River Paper Company, died at his home here January 1.

At an early age Mr. Sisson worked with his father, George Sisson, in the lumber business and was prominently identified with lumber and paper for fifty years. He was president or an officer of a number of upstate lumber companies.

Mr. Sisson had been influential in the development of Potsdam since 1875. During the World War he served as Federal Food Administrator for St. Lawrence County under Herbert Hoover. He was on the commission for many Liberty Loan, patriotic drives and campaigns in the district.

Mr. Sisson headed several civic organizations in Potsdam and in New York and was a member of the Transportation and National Republican Clubs.

Surviving are his wife, the former Mary Edith Coffin, of Ogdensburg, N. Y., whom he married in 1886, and three children, Hamilton R. Sisson, Ruth C. Byrnum, and Walter C. Sisson.

Charles M. Bartram

Charles M. Bartram, president of the Bartram Paper Products Company, Ltd., which he established in Vancouver, B. C., in 1925, recently died at his home in Vancouver. He was 64 years of age.

Mr. Bartram was very well known throughout British Columbia as an active member of the Canadian Manufacturers' Association, member of the Vancouver Board of Trade, the B. C. Products Bureau, Rotary Club, Terminal City Club, and the Jericho Golf and Country Club.

His widow, a son, Arthur, a member of the Bartram firm, and a daughter survive.

Central Ohio Paper Co. Holds Sales Meeting

COLUMBUS, Ohio, January 4, 1937.—Ninety Salesmen of The Central Ohio Paper Company gathered for the annual sales convention at Columbus, December 29th and 30.

During the convention the salesmen were addressed by executives and officers of the Company and the following mill men: E. C. Colvin, Appleton Coated Paper Company; Frank Vaughan, Bay West Products; W. K. Gerbrick, Central Paper Company; Neil Nash, Nekoosa Edwards Products, and Ernie Brown, Superior Lawrence Bag Division, Sorg Paper Company.

The high spot of the convention occured at the Copco Family annual banquet attended by three hundred and thirty employees and families when the Fifty Year Club was formed. O. A. Miller, chairman of the board, has been the head of the company since 1875. Two of the present 372 employees became associated with him in 1866. They are his brother F. E. Miller, vice president, for years in charge of fine paper purchasing, and E. C. Miller, office and traffic manager. These three compose the "Fifty Year Club."

The Twenty Five Year Club were also honor guests at this party. There are now thirty-five members who started with the company prior to 1911.

Sidney Roofing Co. To Build

[FROM OUR REGULAR CORRESPONDENT]

VANCOUVER, B. C., January 2, 1937.—The Sidney Roofing and Paper Company Limited will place contract immediately for construction of its new factory on Granville Island it is expected. Plans call for a building one story high, 200 by 200 feet, and specifications state that it shall be completed within two months after awarding of the contract. Materials, as far as possible will be supplied by the company. Interior and exterior walls will be of "Fibrerock," roofing of "Duroid," with flooring of concrete. The building will house offices and warehouse, as well as factory.

Philadelphia Paper Business Active

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., January 4, 1937.—With better than seasonal demand for paper, particularly in the final months of 1936, indications point to continued active markets for practically all grades, with prices showing a gradual upward trend, despite the fact that operating costs increase.

Wilcox, Walter, Furlong Paper Company presented their employees with a bonus of two weeks' salary.

Robert McKee, designer and inventor of pneumatic paper feeding machines, died during the week at his home, 2137 South 64th street, aged 72. For many years he was connected with P. C. Tomson & Co., Front street and Washington avenue, as industrial engineer and master mechanic.

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PAPER TRADE JOURNAL
ESTABLISHED 1872
Reg. U. S. Pat. Off.
15 West 47th St., New York, N. Y.
Henry J. Berger
Editor

Ronald G. Macdonald
Editor Technical Section

Herbert J. Laughton
Associate Editor

Thomas J. Burke, C. A.
Editor Cost Section

Lynne M. Lamm
Washington Correspondent

Price, Per Copy, 10 Cents
United States, Per Annum, $4.00
Canada and Foreign Countries in Postal Union, $6.00

Member Audit Bureau of Circulations

Vol. CIV New York, January 7, 1937 No. 1

COMING EVENTS IN THE PAPER INDUSTRY

AMERICAN PAPER AND PULP ASSOCIATION, Sixtieth Annual Convention and meeting, Waldorf-Astoria Hotel, New York, February 22-26.

TECHNICAL ASSOCIATION OF THE PULP AND PAPER INDUSTRY, Convention, Waldorf-Astoria Hotel, New York, February 22-25. Annual Luncheon, Waldorf-Astoria Hotel, Thursday, February 25.

SALESMEN'S ASSOCIATION OF THE PAPER INDUSTRY, Annual Meeting and Luncheon, Waldorf-Astoria Hotel, New York, Tuesday, February 23.

NEW YORK ASSOCIATION OF DEALERS IN PAPER MILL SUPPLIES, Annual Banquet, Hotel Commodore, New York, February 24.

NATIONAL PAPER TRADE ASSOCIATION OF THE UNITED STATES, Convention, Waldorf-Astoria Hotel, New York, February 22-26.

CANADIAN PULP AND PAPER ASSOCIATION AND SECTIONS, Annual Meeting, Montreal, January 27-29.

NEW ENGLAND SECTION, Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Nonotuck Hotel, Holyoke, Mass.

DELAWARE VALLEY SECTION, Technical Association of the Pulp and Paper Industry—Fourth Friday of each month at the Engineers Club, Philadelphia, Pa.

LAKE STATES SECTION, Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

KALAMAZOO VALLEY SECTION, Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park-American Hotel, Kalamazoo, Mich.

PRODUCTION, 15 PER CENT OVER 1936

The volume of production and trade, according to the Federal Reserve Bank of New York, in the year 1936 was approximately 15 per cent higher than the total in 1935 and was greater than for any year since the year 1930.

"According to the preliminary compilation made by this bank," the review says, "the total volume of production and trade in this country in 1936 was approximately 15 per cent above the 1935 total. The estimated business volume for 1936 was about 45 per cent greater than in the low year of 1932, and was the largest since 1930, coming within 3 per cent of that year's total, but remained 17 per cent below the aggregate for the peak year, 1929."

Explaining the method by which this estimate was made, the review says, with respect to a diagram, or that it is based on estimates of production and trade "as computed from over 200 business series, and on the preliminary estimate for 1936 computed from those principal groups of data which are available promptly and have in the past given fairly close indications of the movement of the more comprehensive data."

"The largest percentage increase during 1936 was in construction activity, which, although 43 per cent larger than in 1935, was only about one-half the volume for the peak year, 1928," the review continues. Residential building continued to show a somewhat larger relative gain than other classes, but there were also substantial increases in other types of construction.

The next largest increase, 17 per cent, was in the output of manufactures, which in 1935 led in the recovery movement, so that 1936 output exceeded that of all years back to 1929 but remained 12 per cent smaller than in that year. Production of minerals and metals increased about 13 per cent between 1935 and 1936, and was also the largest since 1929.

"The increase in merchandise and miscellaneous freight carloadings in 1936 amounted to 12 per cent or considerably more than in the previous year. These freight loadings for the year as a whole, however, did not rise above the total for 1931, and were about 32 per cent below the 1929 volume.

"The total volume of agricultural production in 1936 was 3 per cent above the low year 1935, but remained some 11 per cent below the peak year 1931. Field and truck crops totaled less than in 1935, due chiefly to curtailed production of grains, apples, potatoes and tobacco, but there was a substantial increase in the amount of live stock marketed, reflecting an increase in marketings of hogs and cattle, which in 1935 were severely reduced as a result of the 1934 drouth. Some of the 1936 increase was due to forced movement of live stock from the drouth areas, and some was due to the larger 1936 spring pig crop."

A WAR TO SAVE HUMAN LIFE

As the various menaces to man's health and happiness reach a stage where a frontal attack on them is possible a mobilization of our resources against them is inevitable.

Tuberculosis, blindness, maternal health, child welfare, crippled children, the American Red Cross are names or phrases which offer a welcome challenge to public spirited and sympathetic men and women all over the United States.

With the appearance of each new organization comes more need for self-sacrifice and public service. It would require superhuman qualities not to feel a little worry as the number of appeals continues to mount. In spite of this fact, however, mature thought and consideration has shown that in every instance the need is urgent and very real and that the new organization is well qualified to meet it.

The most recent group to mobilize its strength against a great and cruel scourge is the Women's Field Army of the American Society for the Control of Cancer. This nation-wide organization of the women of America will conduct a steady and relentless war to save, not to take human

life. It is the kind of happy wholesome fight against fear and ignorance in which everyone can and should willingly take part.

The enemy is a cold and subtle killer which last year took more than 140,000 lives in the United States alone. It has been estimated that there are between three and five hundred thousand sufferers from this disease alive today. Perhaps a half of them might be saved if knowledge of the signs and symptoms which might mean early cancer were given to them and if they were also strengthened by courage to act on that information without delay.

To the millions of our people whose relatives and friends have borne the cross of cancer the call to arms will come as a welcome and long awaited summons. There will be a real and lasting satisfaction in enlisting as a soldier in a great fight. Cancer is no respecter of class, race, or creed. To combat it is a common task which will recognize no preference. It is a truly unifying and democratic undertaking which should mean all the more in the midst of a civilization torn with undemocratic claims for selfish rewards.

The fight will last long and will require both courage and patience. It must be a matter of personal responsibility undertaken willingly in memory of those who have suffered and for the protection of the hundreds of thousands who need no longer do so. No one is so busy that he can afford to neglect his part in the united effort to check the silent inroads of a cruel killer.

When in March the first enlistment campaign is conducted there will be hundreds of thousands who flock eagerly to the symbol of the drawn sword and who will gladly do their part to bring light and peace where the darkness or ignorance and the sorrow of fear now are found.

Wants Information Regarding Woods

Cornwall-on-Hudson, N. Y.,
December 26, 1936.

Editor PAPER TRADE JOURNAL:

For a number of years I have been collecting the yarns dealing with the fearsome creatures of the lumber woods which have so often been detailed by the old hands to the green men in the logging camps. It has always seemed to me that the life history and habits of such well-established varmints as the side-hill badger, the wampus cat, the tree-squeak, the cross-feathered snee, and so on, are distinctly American folk lore and should be carefully preserved in some sort of written record.

I can claim reasonable familiarity with a fair array of these animals, but I don't know them all. It would help greatly if you would run this letter once or twice in your paper with the idea that some of your readers who are familiar with such interesting fauna would be kind enough to write me direct giving me as complete details as possible on the habits, the habitat, and life history of any such parties with which they are familiar.

Also, any authentic photographs or drawings would be most welcome. These will be carefully copied and the originals returned safely to the lenders.

H. H. TYSON, Director
The Black Rock Forest.

Production Ratio Report

The following statistics are based upon paper production reports to the American Paper and Pulp Association.

COMPARATIVE MONTHLY SUMMARIES

Months	1936	1935	1934
January	76.1%	65.8%	.....
February	77.9%	70.0%	.....
March	76.0%	70.5%	.....
April	82.3%	70.0%	.....
May	81.6%	69.4%	.....
June	80.7%	72.3%	.....
July	77.3%	64.9%	.....
August	81.5%	70.9%	.....
September	80.5%	71.9%	58.2%
October	87.6%	75.6%	64.7%
November	88.0%	75.3%	61.7%
December	.....	71.2%	59.6%
Year	.....	70.5%	.....

COMPARATIVE WEEKLY SUMMARIES

CURRENT WEEKS, 1936		CORRESPONDING WEEKS, 1935	
*December 5	90.3%	December 7	76.0%
*December 12	92.9%	December 14	76.2%
*December 19	93.9%	December 21	79.0%
*December 26	65.8%	December 28	53.4%

The following statistics show the number of mills reporting by ratio groups:

	Number of Mills Reporting, Current Weeks			
Ratio Limits	Dec. 5, 1936	Dec. 12, 1936	Dec. 19, 1936	Dec. 26, 1936
0% to 50%	52	49	41	73
51% to 100%	274	274	269	156
Total Mills Reporting	326	323	310	229

* Subject to revision until all reports are received.

PAPERBOARD OPERATING RATIOS

According to reports from the National Paperboard Association, per cents of operation, based on "Inch-Hours", were as follows:

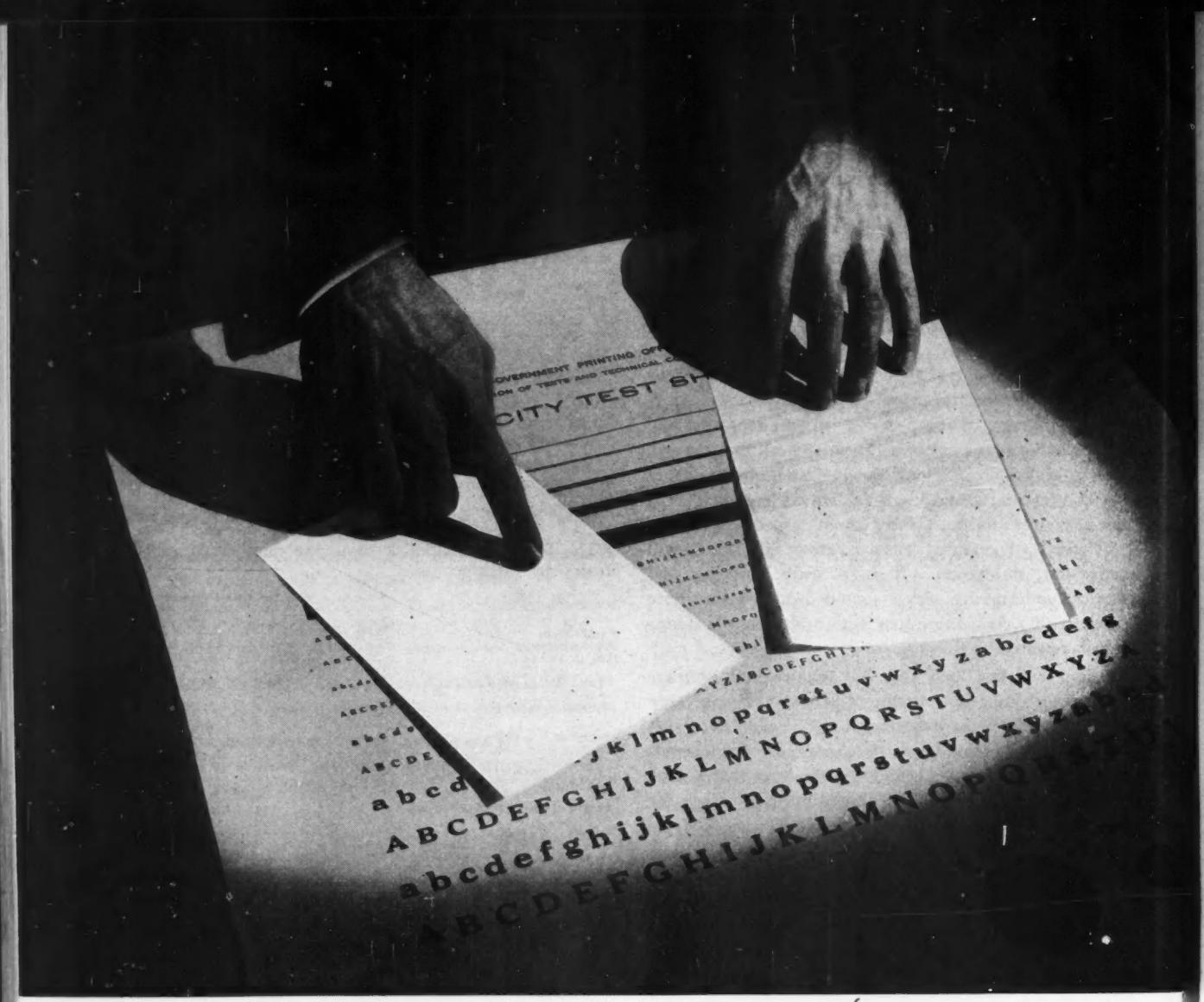
Months	1936	1935	1934	Months	1936	1935	1934
January	61%	61%	....	July	69%	59%	....
February	67%	67%	....	August	75%	65%	....
March	68%	67%	....	September	76%	69%	62%
April	70%	61%	....	October	82%	76%	63%
May	68%	61%	....	November	79%	70%	56%
June	68%	65%	....	December	....	60%	52%

Week ending Dec. 5, 1936—78%
Week ending Dec. 12, 1936—81%
Week ending Dec. 19, 1936—82%
Week ending Dec. 26, 1936—63%

Paper Outlook in New York Is Bright

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., January 4, 1937.—Principal industries in this section connected with the paper industry regard the outlook for 1937 excellent with prospects of further improvement in business conditions. A good year is anticipated by the Bagley & Sewall Company and officials claim that the past year was the best since 1930. The concern reported that their business had shown an upward tendency since the first part of 1936 and prospects are very encouraging. Officials of Knowlton Brothers, Inc., expect good business during the coming year and say there has been a gradual growth during the past two years. The company is now employing about 130 persons which is nearly double its previous working force. New items handled are given credit for the increased employment and enough orders are already booked to insure capacity production for the year. Officials of Taggart Brothers Company were satisfied with business during the past year and are optimistic over the outlook for 1937. The company reports that business was somewhat better than in 1935 and that employment is up slightly as well as payrolls. The Coty Machine Company, Inc., reports that business is good and similar conditions have prevailed for the past year and a half. Orders are now coming in rapidly and consequently the concern is booked for a substantial part of the winter. The plant is now operating almost at peak and employment in general is better than a year ago.



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THE NEW JERSEY ZINC COMPANY 160 FRONT STREET, NEW YORK

ZINC SULPHIDE PIGMENTS IN PAPER

Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Pulpwood Transportation*

By J. V. Martin[1]

Transportation of pulpwood may be considered to cover the movement of wood to the consuming mill from a landing accessible to rail or truck equipment or from a water storage boom which is accessible to marine craft and equipment. A landing may be located at a railroad siding or it may be located along a road over which loaded trucks may travel. A storage boom may be located in a harbor protected from bad storms or it may be located in a navigable river or in an unnavigable river tributary to a somewhat exposed harbor.

Rail Transportation

Pulpwood which is to be transported by rail may be loaded on flat or gondola cars either by hand or by a modified form of derrick known as a "jammer" or "gin pole." Wood loaded in box cars is usually loaded by hand. In order to save handling costs, an attempt is usually made to load wood onto railroad cars directly off the sleighs or trucks which have carried it from the cutting operations, but when this is not possible, the wood is stored along the track and loaded later. It is feasible to haul wood by rail for distances up to 600 miles in this district, although mills confine their purchases to loading points as close to the mill as possible in order to save freight charges. Rail freight charges may vary from about $1.00 per cord to about $7.00 per cord depending on freight rate and weight per cord, but the yearly average for most mills would probably be between $2.00 and $3.00 per cord. The advantages of rail transportation are briefly, guaranteed safe delivery during all seasons, rate of delivery can be readily controlled, receipts can be handled fairly easily and wood may be scaled and inspected fairly accurately. The chief disadvantage is the high cost.

Truck Transportation

Wood may be hauled on trucks of a rated capacity of 1½ tons or higher. Trucks may have a plain racked body or may have a rack that extends back to a two-wheeled trailer. A ton and a half truck is usually loaded with 4½ to 6 tons of wood, with larger capacity trucks being loaded somewhat heavier. Delivery by truck is usually limited to seasons of the year when the roads are dry or frozen and is usually confined to a radius of about 30 miles but has been made to one mill from a distance of 120 miles. Charges of trucking are usually set with little or no knowledge of costs, although there is a formula which is said to provide a fair basis for estimating trucking charges. By this formula the round trip distance at 10 cents per mile plus a base charge of 50c per cord should equal the total income per trip. The total income per trip divided by the cordage hauled per trip should be the trucker's charge per cord. Off-hand, we know of only a few truckers who ever made a fair profit and their charges happened to fit the above formula fairly closely. The advantages to the mill of truck delivery are: (1) wood not accessible by rail may become accessible by truck, (2) hauling charges are usually lower than rail charges for a similar distance. Disadvantages: deliveries cannot be scheduled very well, unloading and handling in mill yard becomes a problem, accurate scaling is difficult.

Marine Transportation

Marine transportation of pulpwood is becoming increasingly important to mills in Wisconsin and Michigan, and few mills can afford to be disinterested in its possibilites. A large number of combinations of marine equipment, methods of handling at point of shipment and handling at port of destination are possible, depending to a large extent on the conditions peculiar to the source of the wood and to the location of the receiving mill. Transportation involving marine movement of wood may be all water, rail and water, rail-water-rail or water and rail. When a receiving mill is able, because of its location, to move wood by raft, it usually does so in preference to loading onto steamers or barges because of the lower cost. Rafting is considered too hazardous an operation, but with the right equipment in good condition and a fair break in weather conditions, rafting is being done successfully by several companies operating on the Great Lakes. The usual equipment includes a supply of several hundred boom logs 16 to 24 feet long, 24 to 48 inches diameter, bored and capped for use with 1⅛ to 1¼ inches steel boom chains; a rugged powerful tugboat capable of holding about 14 or 15 days supply of fuel; a small auxiliary boat, capable of holding a similar supply of fuel and having accommodations for a few extra men besides its crew; a good supply of line and cables. When the raft is being prepared for towing the free-floating wood is squeezed into about one-tenth of its normal surface area so that the logs will be tightly matted together. One and sometimes two extra strings of booms are put around the raft for safety in case any of the booms

* Presented at the meeting of the Lake States Section of the Technical Association of the Pulp and Paper Industry, Appleton, Wis., Oct. 13, 1936.
[1] Member TAPPI, Pulpwood Buyer, Munising Paper Co., Munising, Mich.

fail. The raft is towed at a normal rate of about one mile per hour in fair weather, and although it will safely ride out quite severe storms, the bulk of rafting operations is usually carried on in the 8 or 10 weeks of fair weather that is expected to occur between the last part of June and the first part of September. Direct costs of rafting may vary between 35c and 75c per cord for a distance of about 200 miles, but the large capital investment in booms and the maintenance of booms raises the final cost to at least double the direct costs. A raft that is to be towed a long distance is usually over 5,000 cords and may contain as much as 14,000 cords. Average is estimated to be 8,000 to 10,000 cords. There are many modifications of rafting procedure depending on quantities of wood to be moved, distance involved, weather and water conditions and other factors. The chief advantage of rafting is its low cost per cord for quantity movement. Compared with vessel handling of pulpwood the loading, stowing and unloading costs are saved. The chief disadvantage of rafting is the ever-present risk of loss in a storm. Although the loss is an insurable one, the wood is not usually replaceable in time, and loss of such a large quantity of wood may mean a shutdown at the mill.

Transportation by vessel may involve merely a steamer or may involve using barges and a tugboat. The cost per cord of transporting wood by vessel is lower than land transportation, higher than raft movement and depends entirely on the dispatch that it is possible to achieve. This is true whether the vessel is chartered outright on a time basis or whether it is hired at a set price per cord. The "dispatch" is the total time interval from the start of loading of one trip to the start of loading of the next trip. In order to better the dispatch of vessels, an effort is made to reduce the time of loading and unloading by substituting the use of machinery for manual labor wherever possible. In order to effect this substitution it is desirable to make use of a vessel which has large, unobstructed cargo holds, large unobstructed hatches, and about four steam winches on deck. When the vessel is expected to do its own loading or unloading it is necessary to have, in addition to the above, at least one derrick for each hold and preferably one or two to each hatch. These derricks may make use of slings or cargo nets, which are loaded by men working on floats alongside the vessel, or by men working on a dock if the vessel happens to be loading at a dock. The loaded slings are hoisted aboard the ship, dumped and returned for refilling. Men are employed to stow the wood in neat piles in the ship. It is possible to load 20 to 25 cords per hour by this method. Wood may be loaded from a dock by means of a whirlly or gantry crane, equipped with a suitable grab bucket at a rate of 50 to 60 cords per hour for 4 foot peeled wood. Anchored vessels may also be loaded with wood floating free in a boom by means of a steam-powered floating jack ladder built on a suitable scow, the whole outfit being known as a "loader." This loader is fed by a half dozen men working from auxiliary floats, the wood passing from the water surface to the jack ladder, falling in a tumbled heap in the vessel. As the loader moves along the side of the vessel to the other hatches, a stowing crew follows along behind it on the vessel and stows the wood in neat ranks. This process is repeated until the vessel is loaded. By this method 20 to 50 cords per hour may be loaded and stowed depending on the length of the wood and whether it is rough or peeled. When wood has to be stored up a river on account of unsafe harbor conditions, as is true along the lower St. Lawrence, wood is sometimes floated directly on board vessel in elevated flumes that may sometimes carry the wood to the ship from a storage area 2 miles away. This is quite a costly loading arrangement and is resorted to only when a large quantity of wood is to be handled each year for quite a number of years. The most satisfactory progress in reducing loading costs at the present time is being made by bundling wood in ½ cord to 3 cord bundles (which may be done before the arrival of the vessel), hoisting the bundles aboard with the ship's gear and leaving the bundles intact for quick unloading. Companies that make use of this system usually handle a large quantity of wood each year and charter vessels outright for the period needed, instead of hiring the vessels at a price per cord. The claim is made that important savings in costs are being effected and that wood can be loaded and unloaded at the average rate of 100 cords per hour. A central dispatch office is set up to control the movement of the vessels and this office balances such factors as continuity of mill supply from vessels, avoidance of storms, movement of partly loaded vessels, etc., so that the lowest overall cost to the mill is secured.

Delivery of water transported wood is usually complete when a raft has been spilled into the purchaser's storage booms, or when the loaded vessel arrives at the dock most accessible to the receiving mill. When a mill is so situated that it has navigable water frontage, the wood is taken from the raft or vessel either to the mill's storage yard or direct to the wood room of the mill. Mills not so fortunately situated must arrange to take wood out of the water, or out of boats and reload on railroad cars. One of the Wisconsin mills has installed a very efficient system at Ashland for taking raft wood out of water and loading it on cars. Equipment there consists of two parallel log haul-ups, with a steam derrick situated between the discharge ends of the conveyors. A crew of about five or six men feeds each haul-up, the wood being caught in an adjustable cradle made of link chains. When the cradle is filled to capacity, approximately two cords, it is hoisted in a sling by the derrick and piled on cars spotted within easy reach. Use of two haul-ups permits steady operation of the crane and it is said that better than three cars per hour can be loaded. An example of reloading from vessels to cars is furnished by the equipment which another Wisconsin mill has installed for this purpose at Green Bay. Here a locomotive crane is used to grab wood out of the vessel and load it onto cars spotted on the spur which parallels the dock. In general, vessels may be unloaded by their own gear through the use of slings; by their own gear equipped with grab buckets of either the "clam-shell" or "orange peel" type; by a dock crane using slings or by a dock crane equipped with either "clam-shell" or "orange-peel" bucket.

We have by no means listed all the possibilities of pulpwood transportation, but we hope we have listed most of the methods in use at the present time.

Since railroad transportation costs have been attacked on so many fronts for such a long time, the opportunity for a mill to work out savings does not seem as promising as in the field of marine transportation.

Consideration of the results obtained in other sections leads us to believe that each mill in this section, that now makes use of or intends to make use of water transportation, could afford to make an extensive study of all the factors peculiar to its own situation. Then by consideration of past, present and possibly new methods, a plan may be developed which would pay yearly dividends in savings.

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Instrumentation Studies IV

Correlation of Thwing Formation Readings to Visual Formation Gradings by the Mead Standards

By The Staff of The Institute of Paper Chemistry

In the preceding paper, it was shown that the Thwing formation tester is mechanically and theoretically sound and that it gave readings which were accurately reproducible at all times and by different operators. The question was then raised as to whether the instrument measures the same property that is observed visually as formation. To answer this, 30 papers representing the various types of formations and weights of machine and English finish book papers were obtained from four manufacturers of book papers. Fifty sample sheets taken from these 30 papers were then circulated under code numbers to the four mills supplying the samples, together with a set of the Mead formation standards. Each mill graded these fifty samples, using the one set of standards, and forwarded the results to The Institute of Paper Chemistry and the samples to the next mill.

After all the mills had graded the samples they were returned to the Institute. Two discs from each sample were measured on the Thwing tester. The same discs were later checked by another operator. The results of the visual gradings are shown in Table I, and those of the instrumental grading in Table II. The average visual gradings are plotted with the instrumental readings in Fig. I. After careful study it was found that the best correlation was obtained when 4.5 Thwing units were equal to one visual unit and when a visual grading of 60 was made equal to 45 Thwing units. Thus, the following conversion was used.

Visual Grading	Thwing Units
55	22.5
60	45.0
65	67.5
70	90.0
75	112.5
80	135.0

The smallest separation made with the Mead standards is 2.5 visual units [i. e., the difference between 70 and 67.5 (70-)]. Thus, the smallest division that the visual system provides is equivalent to 11.25 Thwing units.

When the results are plotted in this way, it is apparent that, for a majority of the samples, the two methods of reading correlate quite well. In the upper part of the

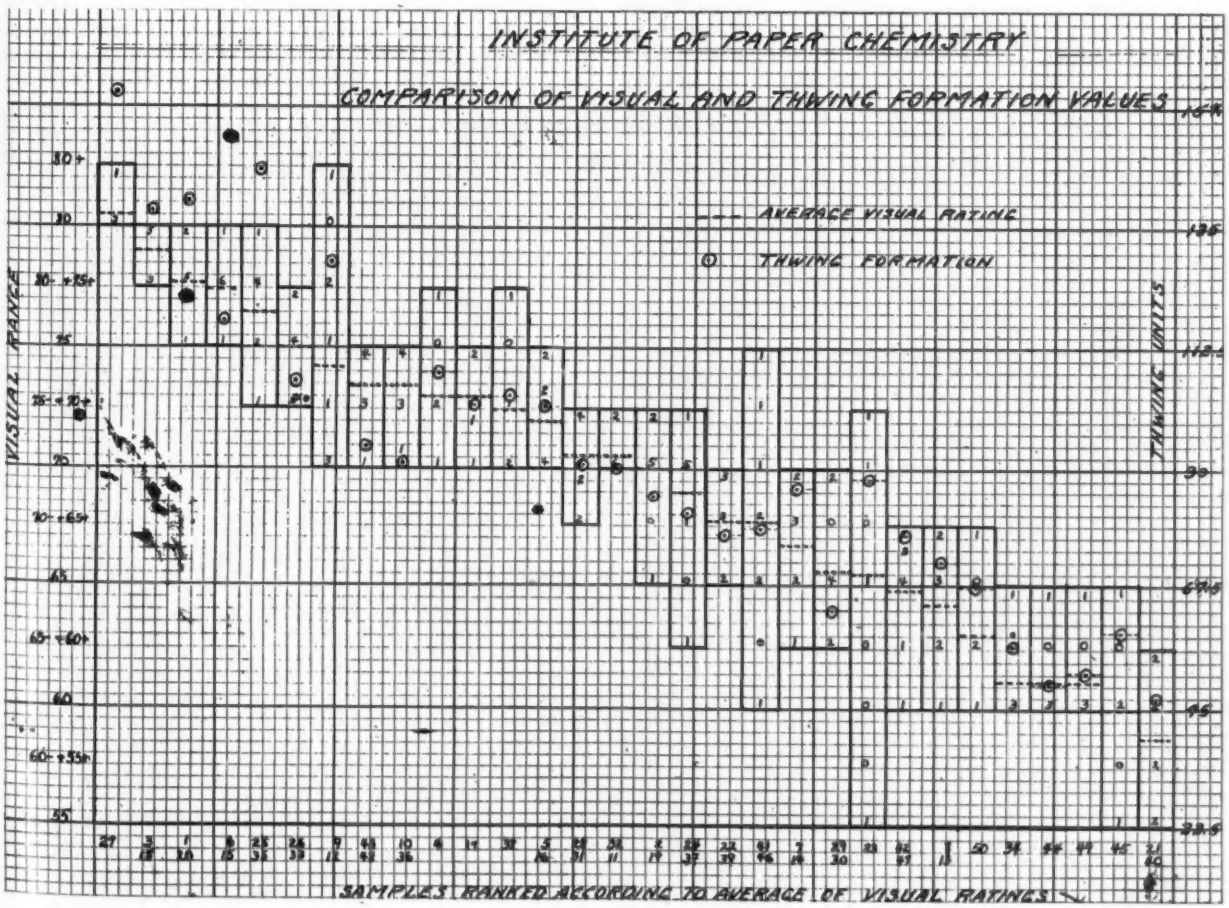
INSTITUTE OF PAPER CHEMISTRY
COMPARISON OF VISUAL AND THWING FORMATION VALUES
AVERAGE VISUAL RATING
THWING FORMATION
VISUAL RANKED
THWING UNITS
SAMPLES RANKED ACCORDING TO AVERAGE OF VISUAL RATINGS

FIG. 1.

range this correlation does not hold so closely. The five samples having the highest Thwing formation show a definite separation between the two methods. We feel that this is due to the nature of the Mead standards. Eighty is taken as the highest possible formation and it seems quite probable that a relatively wider range of formation actually occurs above 75 than is taken care of by the spread in visual ratings from 75 to 80. The Thwing instrument separates the samples which are condensed into this rating and thus throws some of them relatively higher. Of the remaining 45 samples, the average visual ratings and the instrumental readings of 38 fall within 11.5 Thwing units. Of the remaining 7 samples, three (8, 47, 14) fall within 13 Thwing units, which for all practical purposes may be considered within 11.5 units. The agreement between the visual and instrumental readings on 41 out of the 45 samples is thus within the limits of the smallest division of the visual scale (2.5), or the difference between 70 and 70-. With the remaining four samples, there is the following spread between the average visual grade and the Thwing readings:

Sample No.	Difference in Thwing Units
10	19
12	37
23	23
48	16

As scaled, a difference of 5 in visual grading (for example 70 to 75) equals 22.5 Thwing units. Thus, only one sample (12) of the 45 shows a disagreement between visual and instrumental rating of more than 5 visual units. Another sheet of this same paper was included in the visually rated samples as No. 9, and in this case the visual and instrumental readings agreed very well. The data on these two samples of the same paper were quite confusing until the sheets and the discs were examined visually. On sample No. 12, one end of the visually graded sheet had a high uniformity with wide alternately thin and thick streaks. In making the Thwing readings on these sheets the samples were purposely not examined visually before cutting the sample discs to avoid any preferential location of the discs. All discs were arbitrarily cut from the two corners at one end of the sheet. In the case of sample 12 it happened that the end from which the discs were cut was the one having high uniformity.

To check this point two more discs have been cut from the non-uniform part of sample No. 12 and measured on the Thwing instrument. These two discs both gave a reading of 113 as compared to 129 for the discs taken from the uniform part of the sheet. The new readings were introduced in the plotted comparison as 12a in the location that the new reading indicates. The agreement between the visual and instrumental formation of this sample is now within 5 visual units.

The discrepancy found above indicates that, for accurate work, more than two discs should be read or else the sheets should be visually examined to locate the discs cut, so that they approximate the average condition found in the sheet.

To obtain further information on the variation in Thwing formation readings from one sheet to another, ten sheets each of ten papers were taken and one disc from each sheet measured. In all cases except one (45), two samples of each of these papers had been included in the visually graded sheets; thus, for each of these papers four discs had been measured for Table II. The ten readings and the four taken previously were averaged. Tabulated with this average of all samples measured are the averages for these papers on the 2 sheets (four discs) taken for Table II. When these two averages are com-

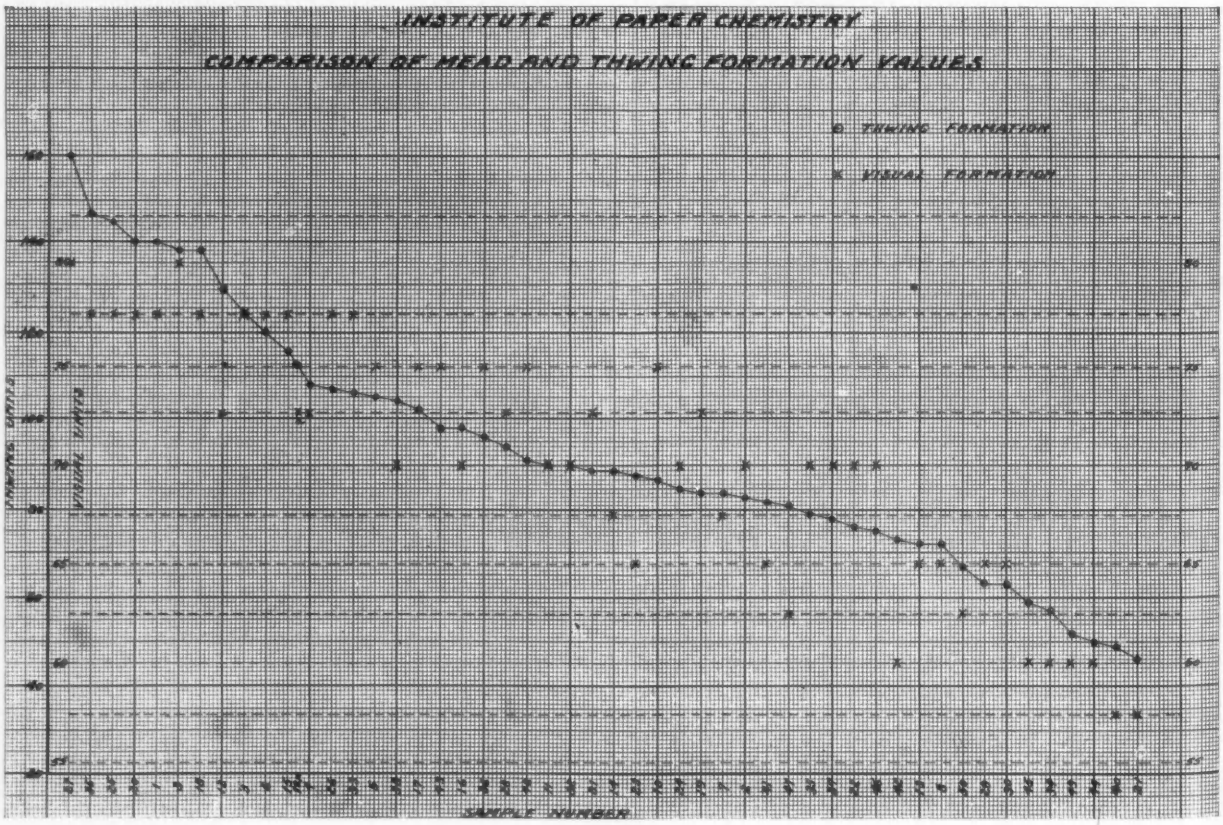

FIG. 2.

pared, it is seen that the average of four discs, two from each of two 19x25 sheets in each case, agrees with the average of 14 discs representative of 12 sheets of the paper within four Thwing units. From this it may be concluded that four discs taken in the above manner give an accurate average measure of the papers.

The findings of the previous report, which showed that different operators could check the results obtained on the Thwing instrument by each other within very close limits, are further substantiated by the data in Table III, where the maximum deviation between two operators' results on any one disc is three Thwing units. To provide a clearer analysis of the reproducibility of visual gradings, the range and average of the visual gradings on each paper are charted in Fig. 2. This chart shows definitely that there is a rather poor correlation between different observers in visually rating formation. Ten of the papers (27, 4, 17, 38, 23, 50, 34, 44, 49, 45) were represented by only one sheet in the visual grading. On all the individual sheets, with one exception, the four laboratories reported ratings which varied by 5 or more visual units. In only three of the thirty papers do all observers agree closer than 5 visual units. The average Thwing readings for each paper taken from Table II are also shown in Fig. 2.

In all cases, except the high formation papers previously discussed, the Thwing reading agrees more closely with the average visual than does the maximum or minimum visual rating reported.

TABLE I.—COMPARISON OF VISUAL AND INSTRUMENTAL GRADINGS OF FORMATION

Sample No.	Laboratory A	B	C	D	Average for sample	Average for paper	Thwing Instrument
1	80—	80—	80—	75	77.0		140
20	80—	80	80—	80	78.8	80—	140
3	80	80	80—	80	79.4		138
18	80—	80	80—	80	78.8	80	138
2	70	70	70	70	70.0		83
19	75—	75—	65	70	70.0	70	84
4	75—	80—	70	75—	73.1	75—	109
5	75	75	75—	75—	73.7		105
16	70	70	70	70	70.0	70+	98
6	80—	80—	80—	75	76.9		120
15	80—	80—	80—	80	78.1	80—	116
7	70—	70	65	65	66.9		84
14	70—	70	70—	65—	66.9	70—	89
8	65	65	65—	60	63.1		72
13	65	65+	70—	65—	65.6	65	72
9	80—	75+	75	80+	78.1		124
12	75—	70	70	70	70.6	75	113*
10	75	75	75—	75—	73.7		87
36	75	75	70	75—	73.1	75—	97
17	75	75	70	75—	73.1	75—	103
21	60—	65—	60	55	58.7		46
40	60—	65—	60	55	58.7	60—	49
22	70	70	70—	65	68.1		76
39	70	70—	70—	65	67.5	70—	79
23	65	75—	55	70	64.4	65	88
24	70	75—	70—	70	70.0		84
37	70	70	65—	70	68.1	70	79
29	65	70	65	65—	65.6		63
30	65	70	65	65—	65.6	65	63
28	75—	70+	70	70—	70.6		95
31	75—	70+	70	70—	70.6	70	89
34	60	65	60	60	60.6	60+	57
26	80—	75	75	75—	75.0		107
33	80—	75	75—	75	75.0	75	107
32	70	75—	70	70	70.6		90
11	70	75—	70	70	70.6	70	90
25	80—	80—	75	80	77.5		143
35	80—	75+	75—	75	75.6	75+	147
41	65	75	70—	70—	68.7		83
46	70	75—	60	65	66.9	70—	75
42	60	70—	65	65	64.4		73
47	65—	70—	65	65	65.0	65	81
43	75	75	70	75—	71.9		98
48	75	75	75—	75—	73.7	75—	91
44	60	65	60	60	61.2	60+	50
45	60	65	60	55	62.5	60	59
49	60	65	60	60	61.2	60+	52
50	65—	70—	60	65—	63.1	65—	67
38	70	75+	70	75—	72.5	75—	106
27	80	80	80	80+	81.2	80	160

* Reread.

TABLE II—THWING FORMATION READINGS ON VISUALLY GRADED SAMPLES

Each reading is an average of two discs from one sample.

Sample No.	Operator No. 1	Operator No. 2	Average	Sample No.	Operator No. 1	Operator No. 2	Average
1-A	141	139		26-A	103	104	
1-B	141	139	140	26-B	109	110	107
2-A	83	84		27-A	159	159	
2-B	81	82	83	27-B	159	161	160
3-A	135	135		28-A	97	98	
3-B	141	141	138	28-B	91	92	95
4-A	123	125	...	29-A	64	63	
4-B	93	96	109	29-B	63	63	63
5-A	108	107		30-A	62	62	
5-B	102	102	105	30-B	64	63	63
6-A	115	114		31-A	89	90	
6-B	125	125	120	31-B	88	88	89
7-A	86	86		32-A	98	97	
7-B	82	83	84	32-B	83	83	90
8-A	74	74		33-A	102	102	
8-B	70	69	72	33-B	111	111	107
9-A	121	119		34-A	58	58	
9-B	128	127	124	34-B	56	57	57
10-A	85	86		35-A	154	149	
10-B	88	89	87	35-B	143	143	147
11-A	85	85		36-A	101	100	
11-B	95	96	90	36-B	93	93	97
12-A	122	120	129	37-A	77	77	
12-B	137	137	113*	37-B	80	79	79
13-A	70	70		38-A	90	90	
13-B	74	75	72	38-B	122	120	106
14-A	92	92		39-A	78	78	
14-B	87	86	89	39-B	80	80	79
15-A	122	119		40-A	50	50	
15-B	111	111	116	40-B	47	48	49
16-A	100	100		41-A	86	87	
16-B	95	95	98	41-B	78	79	83
17-A	115	115		42-A	73	74	
17-B	91	92	103	42-B	73	74	73
18-A	133	133		43-A	95	96	
18-B	143	143	138	43-B	99	101	98
19-A	86	87		44-A	48	48	
19-B	81	82	84	44-B	51	52	50
20-A	139	141		45-A	60	60	
20-B	139	141	140	45-B	59	60	59
21-A	47	46		46-A	79	79	
21-B	46	46	46	46-B	70	70	75
22-A	78	78		47-A	83	83	
22-B	73	74	76	47-B	80	80	81
23-A	86	86		48-A	93	94	
23-B	91	90	88	48-B	88	88	91
24-A	86	86		49-A	52	53	
24-B	83	83	84	49-B	52	52	52
25-A	144	144		50-A	65	65	
25-B	141	141	143	50-B	69	69	67

* Reread.

TABLE III.—THWING READINGS ON INDIVIDUAL DISCS OF PAPERS

Paper No.	5-16	22-39	25-35	26-33	32-11	36-10	41-46	42-47	43-48	45
Readings ...	124	76	130	102	79	91	76	73	93	65
	112	78	141	108	91	93	93	80	91	63
	84	76	147	102	82	98	85	71	92	69
	114	78	127	106	80	89	81	71	93	65
	105	77	147	111	84	93	86	80	97	65
	108	80	141	109	87	95	81	75	83	68
	125	74	145	102	93	86	86	75	97	67
	81	77	141	88	84	103	87	79	87	63
	111	77	144	104	88	91	75	75	88	67
	90	76	130	97	79	107	86	70	87	70
	...	78	149	102	98	86	87	83	96	60
	...	73	141	111	83	89	79	80	100	60
	...	78	152	104	85	101	79	74	93	..
	...	80	143	109	96	93	71	73	89	..
Average	105	77	141	103	86	95	82	76	92	65
Average of 4 discs....	101	77	145	107	90	92	79	77	94	59*

* Average of 2 discs.

Summary

To summarize, it has been shown that the Thwing formation tester measures the same property that is visually graded as formation. A correlation has been established which shows that 4.5 Thwing units are equal to 1 visual unit or 22.5 Thwing units are equal to a difference of 5 on the visual scale. A Thwing reading of 45 correlates to a visual grading of 60. Using the above correlation, it was found that the two methods checked within a visual rating of 5, except with those samples in a very limited portion of the formation scale. For the papers studied, four discs read on the Thwing instrument give an average reading which checks very closely with the average of a large number of readings, and indicate that four tests on each paper are sufficient to give very accurate results. The excellent reproducibility of the Thwing results previously reported was substantiated. The reproducibility of visual gradings between different observers was shown to be relatively poor and the agreement between the Thwing results and the average of the visual results is much better than the agreement of the individual visual gradings.

Instrumentation Studies V

Report on Gloss

By The Staff of The Institute of Paper Chemistry

The physical principles which must be considered in measuring gloss may be briefly stated. The terms *gloss, glare, finish, and smoothness* are all used more or less interchangeably. *Finish* is the broader term and refers to the surface characteristics of a sheet of paper in general. *Smoothness* refers to the absence of surface irregularities under either visual or use conditions. *Gloss* refers to the polished surface of paper as produced by calendering or coating. In brief, *finish* can be used to describe any surface characteristic or quality of appearance, while *smoothness* refers to surface texture, and *gloss* to surface luster. *Gloss* and *glare* are sometimes used to express almost the same quality. At times a technical distinction is made, depending on the arbitrary units in which the qualities are expressed. Psychologically, *gloss* connotes a pleasant lustrous effect, while *glare* is used for the more intense, blinding, and unpleasant effect.

In this qualitative form none of these terms can be expressed in fundamental physical units, since they are essentially subjective conceptions. As an example of this,

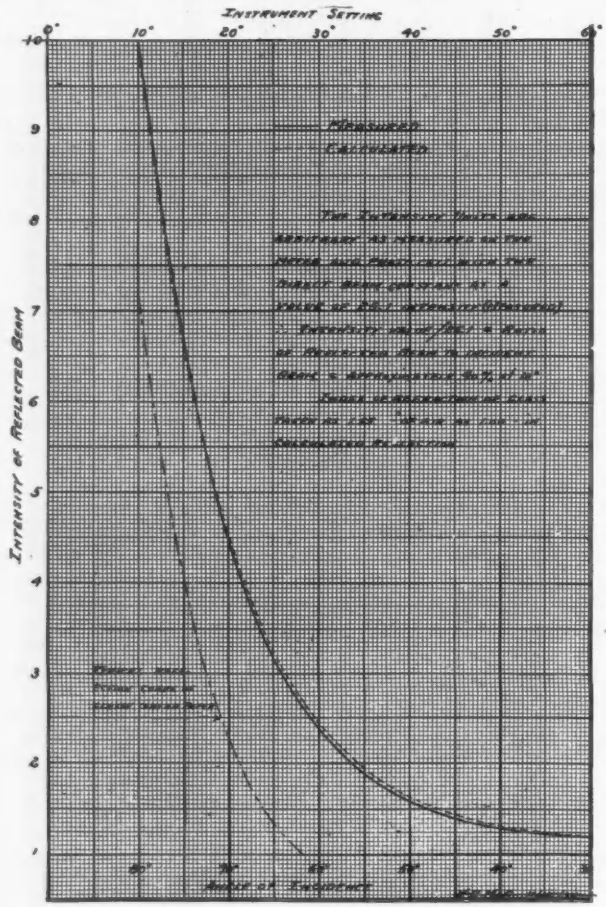

Fig. 1.
Reflection Curve—Black Carrarra Glass.

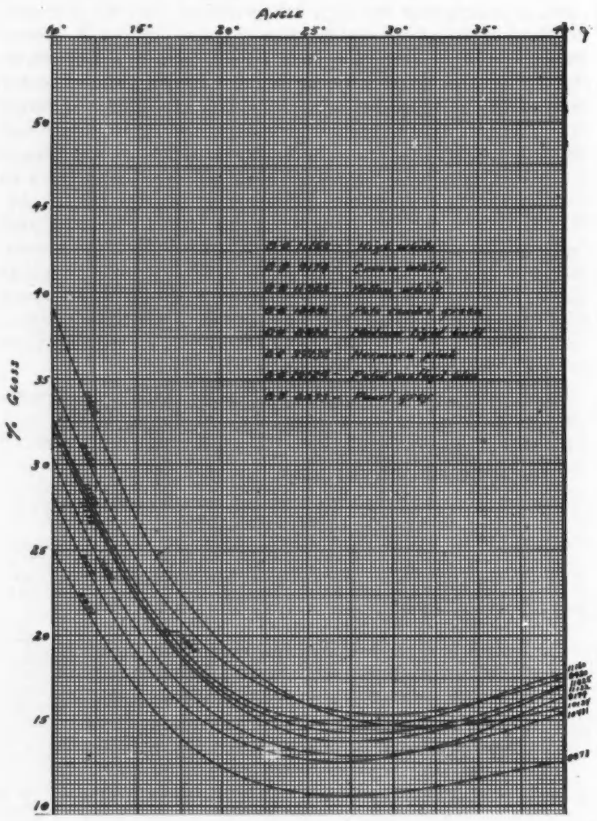

Fig. 2.
Variable Angle Gloss—Colored Papers.

consider the difficulty of converting such gloss terms as "shiny" and "lustrous" into quantitative terms. To say, however, that a surface is glossy definitely conveys a mental picture which can be interpreted as a surface which reflects a good deal of light, much as a mirror reflects it. In this case some sort of localized image of the light source or intervening objects may be seen on the surface under observation. The glossier the surface, the more nearly perfect will be the image. Certain instruments have been designed utilizing this principle. While such an instrument may be suitable for measuring the gloss of paints, it would be unsuitable for even highly calendered coated papers, since the gloss of paints is in general of a higher order than that encountered in papers.

Qualitatively, gloss would seem to depend upon the continuity of the reflecting surface rather than entirely upon its planeness. This conception brings out the essential difference between smoothness and gloss. For example, sand and grit could be mixed with a glossy paint and applied to a plane surface. The result would hardly be called smooth, yet it would be decidedly glossy —as glossy in fact as the paint without the sand. Even so, it would be very difficult to obtain a measure of gloss in quantitative form under these conditions.

In contrast to such surfaces, there are some very glossy surfaces which, at the same time, are very smooth. An excellent example of this type is the surface of highly polished glass, and, most notable of all, the surface of highly polished black glass. Here another aspect of gloss is evident. Visually we invariably rate black glass as being more glossy than white or even clear glass, since the gloss stands out in so much greater contrast in the black glass. The effect of contrast forms a clear distinction between the subjective and the objective measurement of gloss. Objectively, a white and a black glass will give practically identical values for gloss, providing the surface polish and the indices of refraction are practically identical in the two cases, while subjectively this may be far from true.

Some of the laws of light may be recalled here. Light travels in straight lines which change direction only when the light is reflected or refracted at a surface. If the surface of a transparent substance is flat and polished, a certain portion of the light is reflected according to the well-known law that the angle of incidence of the light is equal to the angle of reflectance, while another portion is refracted in a direction depending on the angle of incidence and on the index of refraction of the material. The amounts of light reflected and refracted depend on the angle of incidence and on the refractive index. The angle at which all of the light is reflected is known as the critical angle.

Fig. 1 illustrates the relationship between the theoretical results and the results obtained on the modified Oxford gloss meter for a piece of polished black glass and for a coated book sample. The theory and experiment agree very closely for the glass. In the case of the coated book paper, it is very difficult to determine what index of refraction should be used to give the proper theoretical result. This situation is complicated considerably by the presence of fibers and fillers with different indices of refraction. It actually turns out that a value of the index of about 1.2 corresponds very closely with the experimental curve obtained. Paper, like glass, will follow the general law of increasing reflection as the angle of viewing is lowered. Also, while this specular reflection is increasing, the diffuse internal reflection is decreasing, which thus allows us to differentiate between papers at low angles which could not be separated at high angles, unless we utilize a polarizing prism to separate the diffuse from the specular reflections. Because of this condition, opacity becomes much less of a factor at low angles than at high angles, because we tend to deal with surface reflection only, instead of a mixture of surface and multiple internal reflections. Diffuse surface reflection will still be present. As the illumination approaches grazing incidence, the possibilities of differentiating between samples become much more difficult. This is true when an attempt is made to go to extremely low angles. Then the differences again become small and hence extremely low angles, say less than 5 degrees or possibly even 10 degrees, are not desirable.

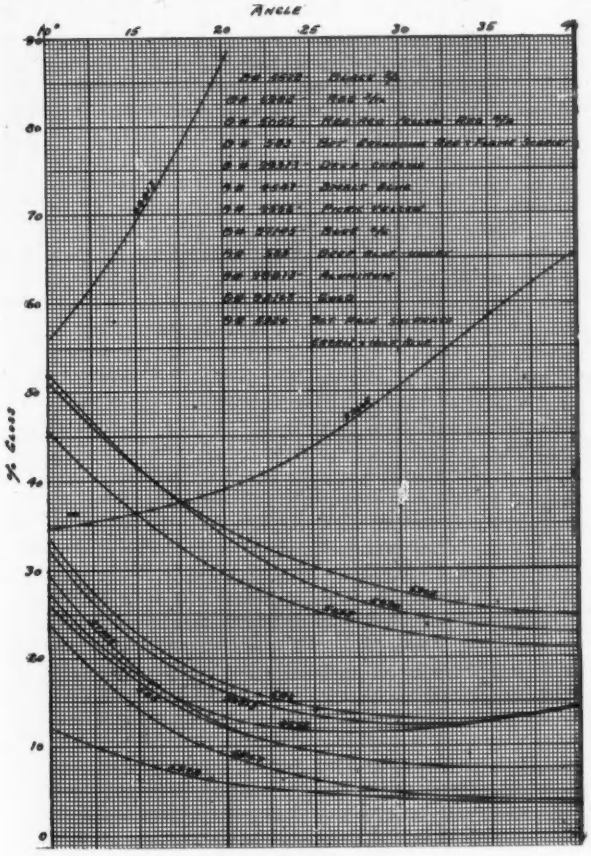

FIG. 3.
Variable Angle Gloss—Colored Papers—Four-Inch Tube

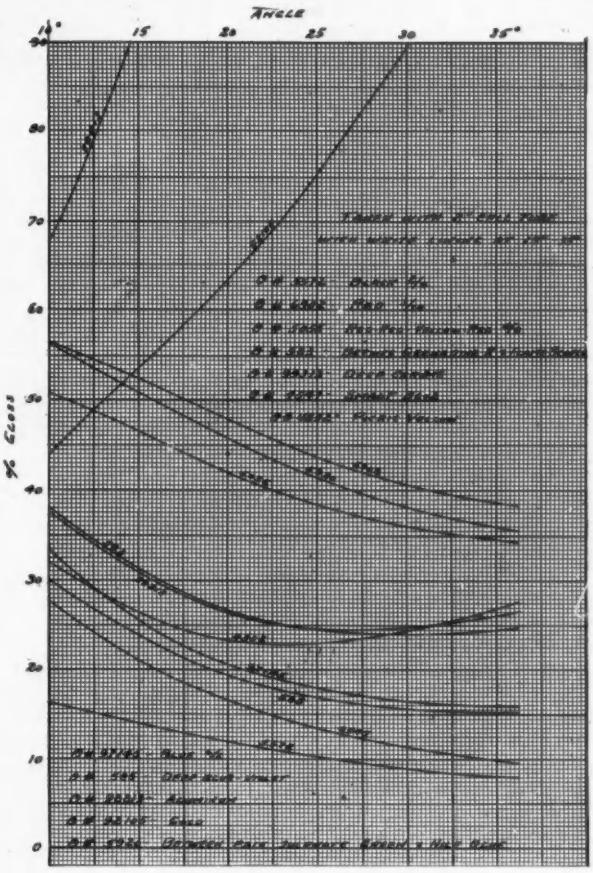

FIG. 4.
Variable Angle Gloss—Colored Papers—Two-Inch Tube.

In paper, the diffuse reflection is more apparent at a high angle of illumination, due to the diffuse internal reflections. This also means that the effect of color

on an estimation of gloss becomes very much more bothersome at high angles than at low. From these considerations it can be seen how desirable it is to use low angle illumination and viewing in a glossmeter.

In Fig. 2, results are shown of percentage gloss at different angles for a number of colored coated papers. These papers are as nearly identical in furnish as is possible to obtain commercially, with the exception that different dyes were used in each paper. In the range from 10 to 20 degrees, the papers give the same order of gloss values as that judged visually by the manufacturer. As an example, the pallid methyl blue gives a much higher gloss reading simply because it was necessary to calender more to reduce the motley appearance of the surface. It is very interesting to note the tendency of the more yellow papers to run high at 40 degrees in comparison with their readings at lower angles, while the blue papers tend to run low at high angles. This phenomenon is caused by the previously stated quality of papers to reflect color in the relatively high diffuse reflection at high angles. The protocell color sensitivity approaches that of the eye; therefore, being more sensitive to yellows, the gloss reading becomes higher due to coloring. This effect is negligible when the specular reflection is large in comparison with the diffuse. Measurement at low angles is found to be a simple method of obtaining this condition.

Figure 3 illustrates results obtained on some very highly colored coated papers. In two cases results were obtained which did not follow the general trend. These are for aluminum and gold, which visually are very much more glossy at high angles than at low. In this case, the gloss values between 10 and 15 degrees were found to be in closest agreement with the manufacturer's own visual grading. In these curves a 4-inch tube was used on the receiving end of the glossmeter.

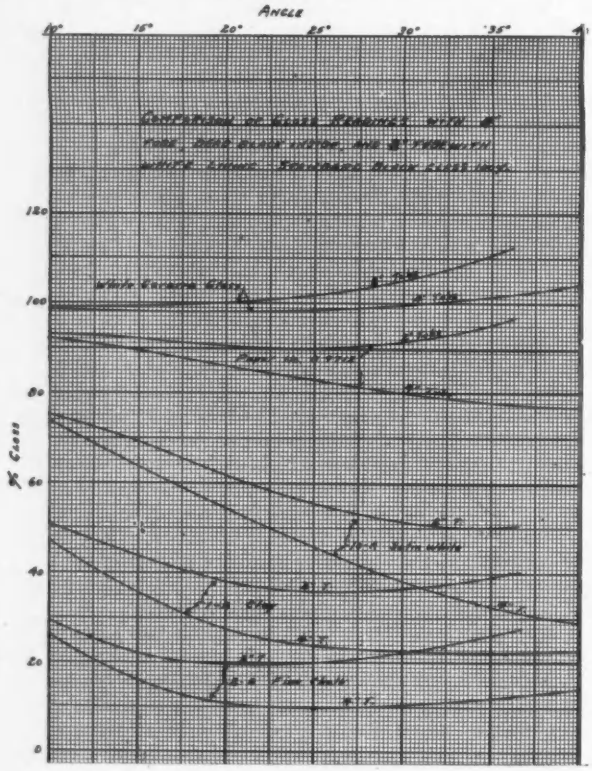

FIG. 5.
Variable Angle Gloss—White Glass and Paper.

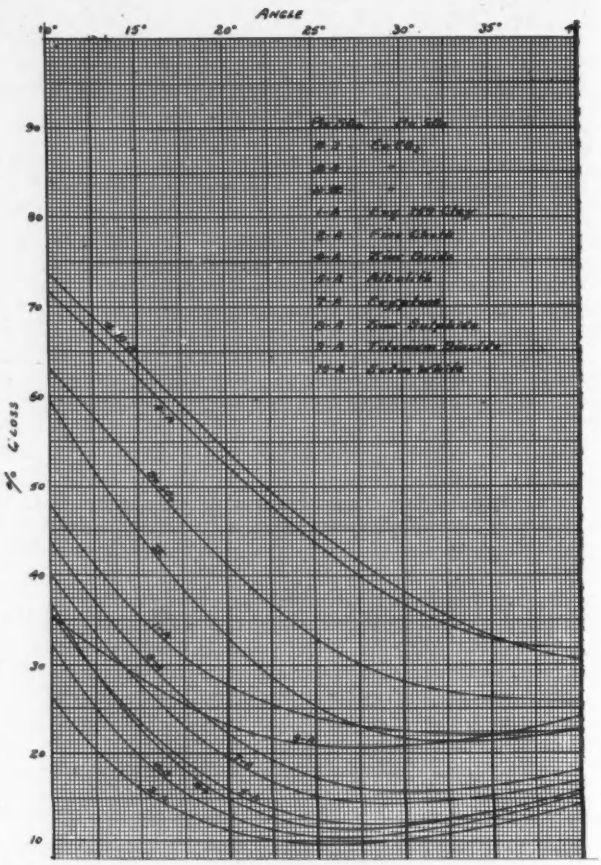

FIG. 6.
Variable Angle Curves—White Papers with Various Coatings.

The gloss measurements on the aluminum and gold can easily be accounted for. One should not interpret these curves to mean that the actual reflecting power goes up with increasing angle. This is not the case. The reflecting power as related to the glass standard increases with angle, however, and these are the values plotted. In Fig. 4 the same papers are again given for the case in which a 2-inch tube is used.

Fig. 5 gives a comparison between results obtained using the 4-inch tube with a black inside coating as compared with a 2-inch tube with a white lining. The 2-inch tube gives a considerably higher proportion of diffusely reflected light than is the case in the 4-inch tube. The results show clearly how this affects gloss measurement.

The curves also show the effect of the 4-inch tube to extend the papers over a wider range. The 2-inch tube gives gloss readings at 15 degrees varying from 21 to 86 per cent while with the 4-inch tube the same papers range from 18 to 85 percent.

One of the most important matters to determine was the variation in gloss values with the material used in the coating process. Fig. 6 indicates the percentage gloss with variable angles for a number of common pigments used in coated papers. The actual values and relations of the curves should not be considered, as this depends upon a number of factors, such as the degree of calendering and the condition of the uncoated paper. What is important is the comparative shapes of the curves. It may be noticed that certain of the curves tend to cross one another at many different angles. Considering the seven

papers having lower gloss, the order is very much dependent upon the angle at which observation is made. The paper which is third from lowest at 10 degrees has become eighth from lowest at 40 degrees. It is particularly noteworthy to compare the values obtained at 10 degrees with those obtained at about 32.5 degrees which corresponds to readings obtained on the Ingersoll glarimeter.

If we were dealing with transparent materials of widely varying refractive indices instead of paper, we could safely say that the higher the index, the greater would be the percentage reflection, no matter what angle was used for viewing the sample. It is not possible to make a definite statement of this kind for paper which may not have some exceptions, simply because we have, in paper, a much more complicated phenomenon due to the mixture of substances, which not only differ in index of refraction but some of which also display the polarization phenomenon of crystals. However, the conclusions which have been drawn for transparent substances will be followed in general by paper.

Summary

In view of the above statements, we may therefore summarize our suggestions and findings as follows: (See Fig. 7).

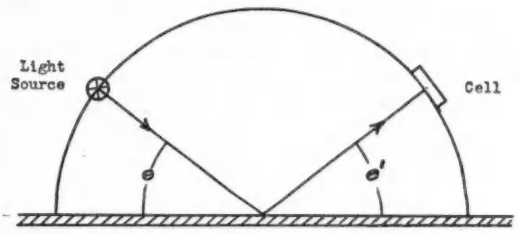

FIG. 7

1. The value of a variable angle instrument is doubtful and is therefore not preferred.
2. A fixed angle instrument is to be preferred.
3. The angle chosen should not be too high (over 25 degrees).
4. The angle chosen should not be too low (under 10 degrees).

As $L\Theta$ and $L\Theta^1$ are decreased—

Total reflection is *increased*
Specular reflection is *increased*
Diffuse reflection is *decreased,* mostly from internal reflections.
Color effect is *decreased.*
Opacity effect is *decreased.*
Surface smoothness effect is *increased.*

Union Bag Absorbs Unit

The Union Bag and Paper Corporation of New Jersey last week announced through A. Calder, president, that for purposes of simplifying its corporate structure it has absorbed its wholly owned subsidiary, the Union Bag and Paper Corporation of Georgia.

A petition has been filed by Union Bag and Paper Corporation of New Jersey for domestication in the State of Georgia, to take effect thirty days from date of filing.

Formation of the Union Bag and Timber Company of Georgia was announced at the same time, to handle all woods operations of the Union Bag and Paper Corporation. A. Calder, president of the parent organization, will be president of the new company.

Finds Newsprint Rates Unreasonable

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 6, 1937.—In a decision in the case of the Inland Empire Paper Company against the Great Northern Railway Company, the Interstate Commerce Commission says that "rates on newsprint paper, in carloads, from Millwood, Wash., to Sheridan, Wyom., found unreasonable, and to El Paso, Texas and points in New Mexico, and eastbound transcontinental groups F,G, I and J found unduly prejudicial. Reasonable rate to Sheridan and nonprejudicial basis of rates prescribed.

"Rates to El Paso and to New Mexico and eastbound transcontinental groups F, G, H, I, and J except to Sheridan, found not unreasonable, and to group H found not unduly prejudicial."

The Commission has also rendered a decision in connection with newsprint paper, paper articles and paper boards in which it says in its syllabus:

"1. Authority granted, on conditions, to continue and to establish and maintain rates on newsprint paper, in carloads, from points in New England, New York, Canada, and western trunk line territory to destinations in New England, trunk line, central, western trunk line, and southern territories,; on unfinished blank wall paper, in carloads, from and to the same points except Canada; and on paper articles, in straight or mixed carloads from points in Maine to destinations in trunk line, central, Illinois and western trunk lie territories, without observing the long and short haul provision of section 4 of the Interstate Commerce Act.

"2. All other and further relief prayed denied."

Ask 20 Per Cent Reduction in Duty

Despite the almost hopeless chance of securing a favorable decision, importers of various papers are continuing to claim that their shipments are entitled to the 20 percent preferential reduction in duty rate given goods from Cuba on the basis of most favored nation treaties with the exporting nations. The long list of such claims fled with United States Customs Courts during the past month as compiled by the Import Committee of the American Paper Industry indicates the extent to which imports of paper are increasing. Such imports during the past month included the following: White blocking paper from Germany, Drawing paper from Germany (Two shipments), Bristol Board from Germany, Tissue veneer paper from Japan, Kraft wrapping from Norway, Esparto book paper from England, Pulp board from Austria, Indurated fiberware from Germany, Adhesive mending tissue from Germany, Miscellaneous paper from Germany (Seven shipments), Book paper from Finland, Photographic tissue from England, Decorated and fancy paper from Germany, (None shipments), Filter Masse from Germany(Transfer paper from Germany (Four shipments), Kraft Wrapping from Sweden, Litho transfer paper from Hong Kong, Writing Paper from Germany.

Algonquin Increases Wages

[FROM OUR REGULAR CORRESPONDENT]

OGDENSBURG, N. Y., January 4, 1937.—Announcement is made that wage increases amounting to about $30,000 per year will go into effect this week at the Algonquin Paper Mill, of which Frank A. Augsbury is president. The increases average about ten cents per hour and affect about 240 men.

Pulp and Paper Industry Literature Review

Abstracts of Articles and Patents Compiled by the Abstracts and Bibliography Committee of the Technical Association of the Pulp and Paper Industry, A. Papineau-Couture, John F. Ohlson, C. E. Peterson and Clarence J. West, Chairman

Copies of United States Patents can be obtained from the United States Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps.

Machinery

The Paper Machine Construction During the Year 1935. N. Wunderlich. Zellstoff U. Papier, 16, No. 5: 176-79 (May, 1936).—The grinding of the pulp wood at low consistencies and at a temperature of about 65°C, classifying ground wood, pocket grinders and versus continuous, new type beaters such as the Banning, improvements in centrifugal screens for dirt removal, various improvement on the wet end of a fourdrinier, improvement on board machines such as the "extractor"; are among the topics discussed with references to the literature.—J. F. O.

Some Paper Making Equipment Observations. Harry E. Weston. Paper Industry 18: 199-211 (June, 1936); Paper Trade J. 102, No. 24: 33-39 (June 11, 1936).—An outline of some of the more important developments of the last few years in the design of pulp and paper making equipment.—A.P.-C.

Preventing Seepage Through Linings. H. E. Kip and L. M. Currie. Chem. Met. Eng. 42: 382 (1935).—To prevent seepage through the lining to the shell of pressure digesters the lining is supported on an open checker-work lining, the spaces in which are filled by a solution to which pressure can be applied to balance the pressure of the liquid in the vessel. Thus, for alkaline-pulp digesters the solution may consist of an aqueous solution of ferric or chrome alum or aluminum sulphate; for neutral pulp digesters, of a suspension of hydrated lime in aqueous barium chloride solution; and for acid pulp digesters, of aqueous sodium silicate containing an introfier.—A. P.—C.

Method of Drying Pulp. Maschinenfabrik "Imperial." Frederick W. Adams and George S. Witham, Jr. U. S. pat. 2,045,818 (June 30, 1936).—An injector is provided in the digester blow line, the intake leg of the injector leading into a water well that is kept filled to a definite level, so that sufficient water is drawn into the injector and mixed with the pulp while blowing to prevent the formation of any objectionable quantity of steam during practically the entire blow.—A. P.—C.

Screen Plates. Andreas Einar. Fr. pat. 797,408. The plate is coated first with a thin film of aluminum oxide and then with a hard metal such as nickel, chromium, etc. —A. P.—C.

Method of Drying Pulp. Maschinenfabrik "Imperial." Fr. pat. 795,412 (Sept. 26, 1935).—The sheet is perforated with numerous holes (either perpendicular or oblique to its surface) such that air may be blown through the sheet during drying.—A.P.-C.

The Development of the Paper Machine. Walther Heller. Wochbl. Papierfabr. 67, Special Number: 45-51 (June, 1936).—A brief description of each new development and improvement added to fourdriniers, cylinder and board machines, from the time of their origin to the present day. After 1910, machines were being built exceeding 5 meters in width and traveling over 200 meters per minute: in 1921 a machine was in operation traveling 300 meters, and in 1929 a machine of 7.7 meters in width and a speed of 400 meters. The suction couch by Millspaugh, the Westinghouse electric drive and Minton vacuum dryer are among the more important inventions described. —J. F. O.

Save-Alls in the Paper Mill. L. E. Randecker. Paper Industry 18: 376-378 (Aug., 1936).—A brief discussion of the value and disadvantages of save-alls, more particularly those of the vacuum filter type, and of the importance of the human factor in their successful operation. —A. P.—C.

Treatment of Wood Pulp. Hercules Powder Co. Fr. pat. 795,005 (March 2, 1936).—A relatively thin sheet of felted wood pulp fibers is broken or cut into thread- or ribbon-like pieces which are suitable for nitration by the methods used for nitrating cotton.—A. P.—C.

Calender Bowls. R. G. Oliver. World's Paper Trade Rev. 105: 1524-1530, 1568-1574, 1612, 1614, 1652, 1654, 1692, 1694 (May 8, 15; 22, 1936).—An outline of their development, manufacture, properties and care.—A.P.-C.

The New Edward Lloyd Machine. Anon. World's Paper Trade Rev. 105: 844-846, 913-916 (March 13, 1936).—A detailed description of the British Thomson-Houston electrical sectional drive of the new 320-inch newsprint machine recently installed in the new extension to the Kemsley mill of Edward Lloyd, Ltd.—A.P.-C.

The Necessity of Moisture Control on Paper Machines. H. O. Ehrisman. Paper Trade J. 103, No. 1: 93-96 (July 2, 1936).—A discussion of the difficulties arising from improper sheet moisture experienced on the paper machine, in the processing departments and the printing plant, together with a discussion of the merits of the Foxboro Verigraph for controlling moisture on the paper machine.—A. P.-C.

The Development of High Speed Paper Machines. W. T. Bennett, B. Malkin and J. H. M. Jones. Paper Trade J. 103, No. 7: 91-97 (Aug. 13, 1936); Pulp Paper Mag. Can. 37: 505-511 (Aug., 1936).—An outline of the development of the paper machine from its origin to its present state, with suggestions as to future developments.—A.P.-C.

Surface Treatment of Paper on the Fourdrinier Machine. Elizabeth Hunter. Tech. Assoc. Papers 19: 313-319 (June, 1936); Paper Trade J. 102, No. 26: 42-48 (June 25, 1936).—A survey of U. S. patents in Class 92-40, together with a selected few from other classes.—A. P.-C.

Rubber-Covered Table Rolls. Anon. Pulp Paper Mag. Can. 37: 393-394 (June, 1936).—A description of the manufacture of rubber-covered table rolls.—A. P.-C.

Paper Machine Rolls From a Rubber Man's Viewpoint. W. L. White. Paper Trade J. 103, No. 1: 97-100 (July 2, 1936).—A description and discussion of the manufacture of rubber roll coverings for paper making.—A.P.-C.

Joining Felts. T. Milnes and Ayres Ltd. Brit. pat. 434,521.—The ends of a drier felt to be joined are formed by folding back flaps, stitching them and slotting the folded parts to leave interprojecting loops held together by a bar or bars threaded into the loops, and which may have rounded edges and may be held in place by stitches.—A. P.-C.

The Disintegration of Wool Felts. Louise E. McGrath. Paper Industry 18; 281-284 (July, 1936).—A brief discussion of the action of bacteria and warm water in causing decomposition of wool fibers in paper mills.—A. P.—C.

Knotter. Edward J. Trimbey. U. S. pat. 2,047,808 (July 14, 1936).—The horizontal, rotary, outflow type of knotter provided by the invention is characterized by the three following features: (1) A multiple-discharge intake fitting which directs the stock to areas on the interior screen surface at either side of the axis of rotation and well above the bottom of the screening cylinder; (2) maintenance of a pond of screened pulp in which the bottom of the screening cylinder is immersed; (3) the discharge end of the cylinder is conically tapered and is provided with an internal helix.—A.P.-C.

Continuous Filter. Roger W. Richardson. U. S. pat. 2,030,538 (Feb. 11, 1936).—When passing over the suction box the wire is supported by a moving surface composed of a series of slats driven at the same speed as the wire. The construction of the supporting surface is such as to enable it to withstand pressure due to a head of stock. Considerable pressure may be used, with or without the aid of suction, by delivering pulp between two converging wires in contact with the traveling supporting slats structure.—A.P.-C.

Endless Conveyer Band for Pulp Filter. Marcel Lamort, assignor to E. et M. Lamort Fils. U. S. pat. 2,043,181 (June 2, 1936).—The endless wire cloth conveyer on to which pulp has been filtered is subjected to vibrations, e.g., in the manner of a vibrating chord. The vibrations may conveniently be produced by means of a square section rod revolving at high speed and lightly touching the conveyer with its edges.—A.P.-C.

Consistency Regulator. Oscar M. Nickerson. U. S. pat. 2,047,592 (July 14, 1936).—A stream of the stock to be regulated is passed between a source of light and a photo-electric cell. The latter is suitably connected in a circuit to control a motor actuating a valve in the dilution-water supply line in such a manner as to maintain the consistency of the stock constant.—A.P.-C.

Welding Joint for Wire Cloth. Ferdinand Steinhart. U. S. pat. 2,049,752 (Aug. 4, 1936).—One or more weft wires are withdrawn from each of the ends to be united. The crossed ends of the warp wires of each end are opened apart up to where they cross over the last weft wire and the warp wires are cut to uniform lengths so that they terminate in sloping surfaces ending in the planes of the upper and lower faces of the fabric. The two ends are brought together with corresponding warp wires in abutting relation, and each pair of abutting wires is welded together.—A.P.-C.

Seam for Woven Wire Fabric and Method of Making the Same. Walter C. Sutton, assignor to The Lindsay Wire Weaving Co. U. S. pat. 2,049,575 (Aug. 4, 1936).—Corresponding warp wires of the two ends of the fabric to be joined are held in abutting or overlapping engagement with each other and suitable welding metal, such as silver, is sprayed on the contacting wires in presence of a reducing gas.—A.P.-C.

Fourdrinier Paper Making Machine. Bernard A. Malkin, assignor to Dominion Engineering Works, Ltd. U. S. pat. 2,047,422 (July 14, 1936).—The invention provides a simplified and improved construction of removable fourdrinier section, in which supporting beams or rail members are arranged to travel with the table roll section and to support one side thereof on the cantilever principle during movement of the table rolls to and from operative position.—A.P.-C.

Suction Box Cover. John S. Swanger, assignor to Westinghouse Electric and Manufacturing Co. U. S. pat. 2,042,198 (May 26, 1936).—The cover is perforated in a honey comb pattern in which the parallel rows of openings are shifted from the direction of travel of the sheet by an accurately predetermined angle a, such that $\tan a = 0.866 (n—1.5)$, in which n is the number of holes in the longer rows of holes.—A.P.-C.

Paper Manufacture. James d'A. Clark and John Traquair, assignors to The Mead Corp. U. S. pat. 2,044,281 (June 16, 1936).—In order to eliminate two sidedness, additional paper-forming material is applied to the wire side of the sheet after the latter has reached a sufficiently definite stage of formation that the liquid of the added suspension is readily absorbed by the wire side of the sheet and carries the filler and other suspended solids into the interstices of the sheet.—A.P.-C.

Press Felt Cleaner. Lawrence L. Lapeyrouse. U. S. pat. 2,043,415 (June 9, 1936).—The vacuum head or shoe, which is mounted to be reciprocated across the width of the felt, is opened at the top and provided across the top with a number of felt-supporting rolls, alternate rolls being transversely convex and the intermediate ones concave. The water injecting nozzle is located nearer the end of the vacuum head over which the felt first passes.—A.P.-C.

Paper Machine Slitter Knives. Albert J. Thibedeau. U. S. pat. 2,043,818 (June 9, 1936).—The invention provides means for adjusting the slitter knives (either individually, in predetermined groups, or all together) to the inoperative position mechanically and by remote control.—A.P.-C.

Adjustable, Free Running, Self Aligning Creaser or Slitter. Aloysius J. Carr. U. S. pat. 2,048,684 (July 28, 1936).—The invention provides various improvements in the construction of creasers or slitters for solid or double-faced corrugated board. One of the supporting shafts is relatively stationary in normal operation, and the complementary slitting or creasing members are mounted thereon so that all of the creases or scores can be of the same depth and of minimum width. One slitter of each pair is free running and is mounted so that it may be biased and shifted axially proportionately to the sine of the angle of biasing, which frees the slit board from the cutters. "Whip" in the stationary supporting shaft is eliminated by rotatably mounting each of the stationary shaft supported members with respect to a supporting base.—A.P.-C.

Web Processing Machine. Charles P. Putnam. U. S. pat. 2,048,754 (July 28, 1936).—The web passes over a constant-diameter roll (preferably one of the processing rolls) and is pressed into contact therewith by means of a series of belts that wrap around a considerable arc of the roll and that are driven at a lower speed than the web.—A.P.-C.

Grinding or Refining Machines for Paper Pulp. F. Lord and A. C. Wilby, Jr. Brit. pats. 423,898 (Feb. 6, 1934) and 441,316 (Nov. 19, 1934).—The pulp is ground

by shearing between stationary blades and blades which are secured to the underside of rotating discs; a number of pairs are superposed. The general flow is upwards, but shearing takes place only while the pulp is flowing outwardly from the axis. According to 441,316 baffles are provided to ensure the return idle flow inwards without lodgment of pulp in undesirable places.—A.P.-C.

Preparation of Pulp Stock for Delivery to a Paper Machine. P. Dennett. Brit. pat. 349,360 (June 5, 1934).—After screening and, if desired, partial dehydration, the pulp is passed through a rotating and reciprocating distributing cylinder formed with larger perforations than those in the screens.—A.P.-C.

Delivery of White Water in a Paper Machine. Harry Henshall. Brit. pat. 439,454 (Dec. 6, 1935).—In paper and board machines, white water is delivered as an automatically self-cleaning shower through a tube containing a straight-edged rotating blade, the edge passing across the inner ends of longitudinal series of fine perforations in the screens.—A.P.-C.

Regulator for Paper Stock. George S. Witham, Jr. Can. pat. 357,405 (April 28, 1936).—In a passage through which the stock flows, a rotatable member is mounted to rise and fall with the stock surface to indicate the stock depth, and is driven by the stock according to the rate of flow. The consistency of the stock is recorded by a mechanism operable in accordance with variations in the rate of speed of the rotatable member.—A.P.-C.

The Machine Shop Operation in a Paper Mill. Ernst Oestreicher. Wochbl. Papierfabr. 67, No. 17; 316-18 (April 25, 1936).—Organization of the machine shop of a paper mill.—J.F.O.

Investigation of a Flotation Save-All. W. Brecht, L. Eberstadt and W. Kilpper. Papier-Fabr. 33, No. 49: 404-16 (Dec. 8, 1935).—The authors made a thorough investigation of the Adka Saveall in the Biberist paper mill. Previous studies of a flotation save-all were discussed, the action of the flotation save-all, the Adka Save-all with drawings and hook-ups, the influence of rosin size and the addition of alum and also the addition of caustic were studied, the influence of the consistency of the return water as well as the amount handled and the results of the investigation are given in detail.—J.F.O.

A New Flow Meter. E. G. Drautz. Wochbl. Papierfabr. 67, No. 1: 358-59 (May 9, 1936).—Description of an instrument for measuring the flow of gases and liquids in pulp and paper mills; such as white water, bleach liquor, etc.—J.F.O.

Piston Pumps and Packing Materials. Hans Diegmann. Wochbl. Papierfabr. 67, No. 21: 392-93 (May 23, 1936).—By means of sketches, the author briefly describes the various types of piston pumps.—J.F.O.

Application of the Centralograph to a Pulp and Paper Mill. E. Prymus. Svensk Pappers-Tidn. 39, No. 10:191, 193-195 May 31, 1936).—This is a description of the Ericsson centralograph, a recording instrument for controlling the performance of any number of machines in any industry. By means of diagrams the instrument indicates how many hours the individual machine operated, if shutdowns occurred and how long they lasted, how often they occurred, at what speed the machines operated, etc.—C.J.W.

Automatic Roll Regulators. Papier-Ztg. 61, No. 37:745-746, 748 (May 6. 1936).—The purpose of these regulators is to prevent the rolls from travelling towards one side during the winding or rewinding process and to produce rolls with clean straight edges. Two types are described, regulators based on a mechanical-pneumatic principle and suitable for not too permeable webs, Cellophane, or photographic papers with a light-sensitive coat, and photo-electric cells, which can be employed for air-permeable tissues, chiefly in the textile industry—C.J.W.

Investigation of the Influence of Screening Upon the Cleanliness of Pulp. H. Alfthan. Finnish Paper and Timber J. 18, special issue: 363-364, 366-368, 370-371, 373 (April, 1936).—A comparison of the efficiency of several types of screens (Spangenberg, Biffar and flat screens) for eliminating small impurities, such as bark enclosures, ingrown branches, etc., is given. In general about 75-85 per cent of the impurities can be removed. For obtaining maximum efficiency knotters and rifflers must be provided and the screen plates be equipped with small slots.—C.J.W.

Wires and Suction Boxes. G. Cesconi. Ind. Carta 3, No. 4:135-138 (April, 1936).—The travel of the wire over the suction boxes causes considerable wear of the two contacting surfaces and creates a certain resistance which will be more or less pronounced according to operating conditions. The article studies different means for either increasing the life of the wire and the boxes or for decreasing the resistance produced by the gliding of the wire over the suction box covers.—C.J.W.

Damaging of Drying Felts Upon Paper Machines and Processes for the Reduction of Wear. Ruth Werner. Beiheft Z. Ver. Deut. Chem. No. 23, Angew. Chem. 49:382-384 (1936); C. A. 30:5785.—The wear on paper machine wood felts is due to free sulphuric acid. The sulphate ions found in the felt result partly from the paper sizing process. For the most part, however, they consist of acid which was formed by oxidation during the steaming process from the sulphur of the wool. The removal of the sulphur atoms results in voids in the wool lattice which in turn give increasing damaging. This sulphuric acid remains bound as a form of wool sulphate with the organic substance. The introduction of an ammonia-air mixture, as carried out continuously in practice, does not neutralize the oxidatively formed acid and no further protection than is obtainable at present can be reached with this process. Increased ammonia concentration results in an increasing damage to the wool. In the case of cotton, the protection given by dilute ammonia must be almost complete, as the formation of sulphuric acid by oxidation is not possible in this instance. The decrease in strength is about the same for wool and cotton, but the tensile properties of cotton are somewhat better than those of wool, which has been aged correspondingly by oxidation.—C.J.W.

Delaware Valley Section to Meet

The Delaware Valley Section of the Technical Association of the Pulp and Paper Industry presents a departure from the usual routine of such meetings.

The meeting will be held at Bookbinder's Restaurant, 125 Walnut Street, Philadelphia, Pa., on Friday, January 22, 1937, and the members will gather for the usual dinner at 6:30. Bookbinder's Restaurant is one of the famous eating places in Philadelphia and is especially famed for its seafood cuisine.

A novel program is in process of preparation. The paper mills of the Delaware Valley area are cooperating to present an exhibition of paper products manufactured in this area. These paper products for example, range in thickness from .002 inches to better than 2 inches. They cover a price range of from 4 cents a pound to 2 dollars a pound. The many novelties covered by this range of products will make the exhibition of particular interest to all who attend the meeting. Each exhibition will be introduced with a brief five minute discussion by representatives of the respective firms.

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING JANUARY 2, 1937

WALL PAPER

F. J. Emmerich, *New York,* Hamburg, 4 bls., 2 cs.; ———, *New York,* Hamburg, 2 cs.; ———, *Berengaria,* Southampton, 35 bls., 12 cs.

PAPER HANGINGS

W. H. S. Lloyd & Co., *American Trader,* London, 29 bls., 2 cs.; W. H. S. Lloyd & Co., *American Merchant,* London, 7 bls., 1 cs.

NEWSPRINT

Perkins Goodwin & Co., *New York,* Hamburg, 191 rolls.

PRINTING PAPER

S. H. Pomerance, *Alaunia,* London, 3 cs.; ———, *American Merchant,* London, 33 rolls, 7 cs.

WRAPPING PAPER

F. C. Strype, *E. Francqui,* Antwerp, 2 cs., 1 roll; Yardley & Co., *Alaunia,* London, 11 cs.; Keller Dorian Paper Co., *Pr. Harrison,* Marseilles, 3 cs.

PACKING PAPER

Gevaert Co. of America, *Cairnmona,* Antwerp, 7 cs.

BRISTOL BOARDS

Keuffel & Esser Co., *American Trader,* London, 2 cs.

DRAWING PAPER

H. Reeve Angel & Co., Inc., *Alaunia,* London, 2 cs.

FILTER PAPER

H. Reeve Angel & Co. Inc., *Alaunia,* London, 9 cs.; C. Schleicher & Schull Co. Inc., *New York,* Hamburg, 1 cs.; ———, *American Merchant,* London, 3 cs.

FILTER MATERIAL

P. H. Petry & Co., *New York,* Hamburg, 100 bls.

SURFACE COATED PAPER

Gevaert Co. of America, *Westernland,* Antwerp, 53 cs.; Dingelstedt & Co., *Westernland,* Antwerp, 3 cs.; Gevaert Co. of America, *Cairnmona,* Antwerp, 68 cs.; Gevaert Co. of America, *E. Francqui,* Antwerp, 15 cs.

METAL COATED PAPER

K. Pauli Co., *New York,* Hamburg, 3 cs.

BASIC PAPER

Dingelstedt & Co., *Westernland,* Antwerp, 8 cs.; Dingelstedt & Co., *New York,* Hamburg, 85 cs.; Globe Shipping Co., *New York,* Hamburg, 25 cs.

PHOTO PAPER

Medo Photo-Supply Co., *Berengaria,* Southampton, 2 cs.

TRANSFER PAPER

D. C. Andrews & Co., *New York,* Hamburg, 3 cs.

DECALCOMANIAS

Sellers Transportation Co., *New York,* Hamburg, 33 cs.

WRITING PAPER

J. W. Hampton Jr. & Co., *Berengaria,* Southampton, 1 cs.; ———, *Alaunia,* London, 6 cs.

TISSUE PAPER

W. J. Byrnes, *Berengaria,* Southampton, 1 cs.

PAPER TUBES

———, *New York,* Hamburg, 192 cs.

MISCELLANEOUS PAPER

Standard Products Corp., *Eidsvold,* Yokohama, 9 cs.; Moller Products Corp., *Eidsvold,* Yokohama, 25 cs.; Japan Paper Co., *Kinai Maru,* Kobe, 72 cs.; Corn Exchange Bank Trust Co., *Kinai Maru,* Kobe, 25 cs.; Keller Dorian Paper Co., *Exochorda,* Marseilles, 5 cs.; Dingelstedt & Co., *New York,* Hamburg, 20 cs.; Keuffel & Esser Co., *New York,* Hamburg, 40 cs.; J. MacDonald & Co., *American Merchant,* London, 1 cs.

RAGS, BAGGINGS, ETC.

Royal Manfg Co., *Eidsvold,* Shanghai, 400 bls. cotton waste; J. J. Ryan & Sons, Inc., *Eidsvold,* Shanghai, 50 bls. cotton waste; Manufacturers Trust Co., *Eidsvold,* Shanghai, 200 bls. cotton waste; E. J. Keller Co., Inc., *Eidsvold,* ———, 48 bls. paper stock; O'Brien Padawer Co., *Eidsvold,* Kobe, 50 bls. cotton waste; ———, *Eidsvold,* Kobe, 450 bls. cotton waste; W. Steck & Co., *Eidsvold,* Kobe, 120 bls. linen waste; Banco Coml Italiane Trust Co., *Eidsvold,* Kobe, 50 bls. cotton waste; New England Waste Co., *Eidsvold,* Kobe, 400 bls. cotton waste; Globe Sanitary Products Corp., *Eidsvold,* Kobe, 90 bls. rags; Chase National Bank, *Eidsvold,* Kobe, 500 bls. rags; ———, *American Trader,* London, 4 bls. rags; Irving Trust Co., *American Trader,* London, 45 bls. rags; Chase National Bank, *Westernland,* Antwerp, 86 bls. rags; ———, *Westernland,* Antwerp, 52 bls. rags; Brown Bros. Harriman & Co., *Westernland,* Antwerp, 59 bls. jute thread waste; American Express Co., *Westernland,* Antwerp, 70 bls. rags; D. M. Hicks, Inc., *Westernland,* Antwerp, 106 bls. flax waste; Amtorg Trading Corp., *Turksib,* Leningrad, 316 bls. rags, 193 bls. flax waste; Chase National Bank, *Turksib,* Leningrad, 129 bls. flax waste; Fleming Jaffe, Ltd., *Turksib,* Leningrad, 1100 bls. flax waste; E. J. Keller Co., Inc., *Turksib,* ———, 461 bls. paper stock; E. J. Keller Co., Inc., *Kinai Maru,* ———, 100 bls. cotton waste; Manufacturers Trust Co., *Kinai Maru,* Shanghai, 160 bls. cotton waste; Manufacturers Trust Co., *Kinai Maru,* Kobe, 200 bls. cotton waste, 110 bls. rags; Manufacturers Trust Co., *Kinai Maru,* Osaka, 120 bls. rags; Manufacturers Trust Co., *Cairnmona,* Antwerp, 107 bls. rags; Commercial Bank of Greece, *Exhibitor,* Piraeus, 21 bls. rags; Mitsui & Co., Ltd., *Asosan Maru,* Nagoya, 334 bls. rags; Irving Trust Co., *E. Francqui,* Antwerp, 61 bls. bagging; E. J. Keller Co., Inc., *Alberta,* ———, 194 bls. rags; J. Cohen Son & Co., Inc., *Alaunia,* London, 66 bls. rags; Castle & Overton, Inc., *Exochorda,* Alexandria, 98 bls. rags; W. Steck & Co., *Exochorda,* Alexandria, 24 bls. bagging, 107 bls. rags; Banco Coml Italiane Trust Co., *Exochorda,* Alexandria, 45 bls. rags, 106 bls. bagging; R. Blank, *Exochorda,* Alexandria, 58 bls. rags; E. J. Keller Co., Inc., *Exochorda,* ———, 181 bls. rags; S. Rosenfelder & Sons, Inc., *Exochorda,* Marseilles, 66 bls. rags; ———, *American Merchant,* London,

57 bls. old canvas; Bank of N. Y. Trust Co., *American Merchant,* London, 15 bls. rags; G. L. Henshaw & Son, *American Merchant,* London, 18 bls. rags; E. J. Keller Co., Inc., *Skagerak,* ———, 500 bls. cotton waste; 133 bls. paper stock; E. J. Keller Co., Inc., *American Traveler,* ———, 77 bls. bagging; E. J. Keller Co., Inc., *Nojima Maru,* ———, 100 bls. cotton waste; E. J. Keller Co., Inc., *Konigstein,* ———, 166 bls. bagging, 476 bls. paper stock.

BONE GLUE

———, *New York,* Hamburg, 50 bags.

OLD ROPE

E. J. Keller Co., Inc., *American Trader,* ———, 68 coils; Banco Coml Italiane Trust Co., *American Merchant,* London, 57 coils.

CASEIN

American British Chemical Supplies, *Southern Prince,* Buenos Ayres, 834 bags; ———, *New York,* Hamburg, 57 bags.

WOOD PULP BOARDS

Jay Madden Corp., *Johanna Thorden,* Viipuri, 188 bls., 659 rolls.

WOOD PULP PASTE BOARDS

Phoenix Shipping Co., *New York,* Hamburg, 30 bls.

ALBANY IMPORTS

WEEK ENDING JANUARY 2, 1937

Halifax Power & Pulp Co., *Karlander,* Sheet Harbor, 6286 bls. ground wood pulp, 1405 tons.

BOSTON IMPORTS

WEEK ENDING JANUARY 2, 1937

Price & Pierce, Ltd., *Fernbank,* ———, 1200 bls. unbleached sulphite; Price & Pierce, Lt., *Fernbank,* ———, 600 bls. unbleached mechanical; Gottesman & Co., Inc., *Fernbank,* Sweden, 1200 bls. wood pulp.

PORTLAND IMPORTS

WEEK ENDING JANUARY 2, 1937

Price & Pierce, Ltd., *Fernbank,* ———, 750 bls. unbleached sulphite, 450 bls. unbleached sulphate; Price & Pierce, Ltd., *Nordvard,* ———, 9400 bls. unbleached sulphite; Gottesman & Co., Inc., *Bessa,* Sweden, 34050 bls. wood pulp; Gottesman & Co., Inc., *Fernbank,* Sweden, 300 bls. wood pulp; Gottesman & Co., Inc., *Nordvard,* Sweden, 3850 bls. wood pulp.

PHILADELPHIA IMPORTS

WEEK ENDING JANUARY 2, 1937

Castle & Overton, Inc., *Eidsvold,* Shanghai, 189 bls. rags; Castle & Overton, Inc., *Eidsvold,* Kobe, 250 bls. rags; Halifax Power & Pulp Co., *Karlander,* Sheet Harbor, 4555 bls. ground wood pulp 1018 tons; Chase National Bank, *Kinai Maru,* Kobe, 334 bls. rags; Chase National Bank, *Kinai Maru,* Nagoya, 68 bls. rags; Chase National Bank, *Boston City,* Bristol, 206 bls. rags; J. A. Steer & Co., *Boston City,* Bristol, 46 coils old rope; ———, *Alberta,* Trieste, 298 bls. rags; E. J. Keller Co., Inc., *Burgerdyk,* ———, 179 bls. paper stock.

WILMINGTON IMPORTS

WEEK ENDING JANUARY 2, 1937

Price & Pierce, Ltd., *Tancred,* ———, 9700 bls. unbleached sulphite.

BALTIMORE IMPORTS

WEEK ENDING JANUARY 2, 1937

Scherman Bros., *Eidsvold,* Kobe, 130 bls. rags; Congoleum Nairn Co., *Eidsvold,* Kobe, 152 bls. rags; Philadelphia National Bank, *Eidsvold,* Kobe, 320 bls. rags; N. Y. Trust Co., *Alberta,* Trieste, 300 bls. wood pulp, *Alberta* Trieste, 1000 bls. wood pulp; Scherman Bros., *Katsuragi Maru,* Yokohama, 270 bls. rags; Price & Pierce, Ltd., *Tancred,* ———, 10200 bls. unbleached mechanical pulp; Pagel Horton & Co., Inc., *Karpfanger,* Sweden, 1500 bls. sulphate.

NEWPORT NEWS IMPORTS

WEEK ENDING JANUARY 2, 1937

Guaranty Trust Co., *Alberta* Trieste, 2847 bls. wood pulp—*Alberta* Trieste, 665 bls. wood pulp; Price & Pierce, Ltd., *Tancred,* ———, 4320 bls. unbleached sulphite; Pagel Horton & Co., Inc., *Tancred,* Sweden, 2230 bls. sulphite.

NEW ORLEANS IMPORTS

WEEK ENDING JANUARY 2, 1937

W. Garretson, *Eidsvold,* Kobe, 106 bls. bagging; Ware Cotton Batting Co., *Eidsvold,* Kobe, 425 bls. cotton waste.

D. J. Gregory Joins Farquhar

D. J. Gregory, who has had rich experience in both Europe and the United States as a designer of high speed hydraulic presses, joins A. B. Farquhar Company, Limited, of York, Pa., as chief engineer of their hydraulic press division.

The Farquhar Company, with a background of 80 years of manufacturing experience, is expanding its hydraulic press division, which includes high speed production presses, hot and cold process presses, and automatic and semi-automatic types.

In Europe, Mr. Gregory's experience includes that with the Krupp plants in Germany, and the Putilov Works in Russia, while that in the United States includes Bethlehem Steel, Southwark Foundry and Machine Company, Birdsboro, Farrel-Birmingham, and Baldwin-Southwark. He has developed new, modern hydraulic presses for the rubber, plastic materials, metal trades, fibre, veneer, paper, aviation, electrical, hardware and processing industries.

International's New York Plants Busy

[FROM OUR REGULAR CORRESPONDENT]

FORT EDWARD, N. Y., January 4, 1937.—Full time operations are being observed at the local branch of the International Paper Company and similar conditions prevail at the Corinth and Ticonderoga plants. An expected increase in the cost of paper early in 1937 is seen as the principal cause for the abundance of orders and jobbers are laying in a large supply of paper before the new price list becomes effective. As a result of the boom the local plant has been operating Sundays in addition to running six-days-weekly during all of December. Book, bond and writing paper are manufactured in the local mill.

The mills at Corinth and Ticonderoga are also running six days a week.

G. B. Gibson Goes With Union Bag

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., January 4, 1937.—George B. Gibson, formerly prominently identified with the paper industry in this section, has accepted a responsible position with the Union Bag and Paper Corporation and he will be stationed in the New York office. Mr. Gibson and family moved to Fernandina, Fla., last spring after he had accepted a position with the Container Corporation of America. He has been doing promotional work for that concern and was planning to move his headquarters to Savannah, Ga., until he obtained the position with the Union Bag and Paper Co. In his new position he will be a sales representative and cover the eastern territory.

INSURE MINIMUM PRODUCTION COSTS

BREAK-DOWN, imperfect bags, and general waste of both time and material are common occurrences in bag factories. Insure yourself against these unnecessary "profit eaters" by installing POTDEVIN paper bag equipment. You will find that POTDEVIN machines produce bags at the fastest speeds, operating with the highest degree of efficiency at the lowest cost.

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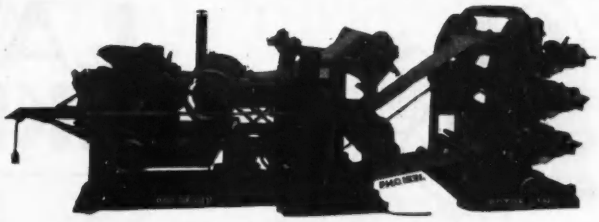

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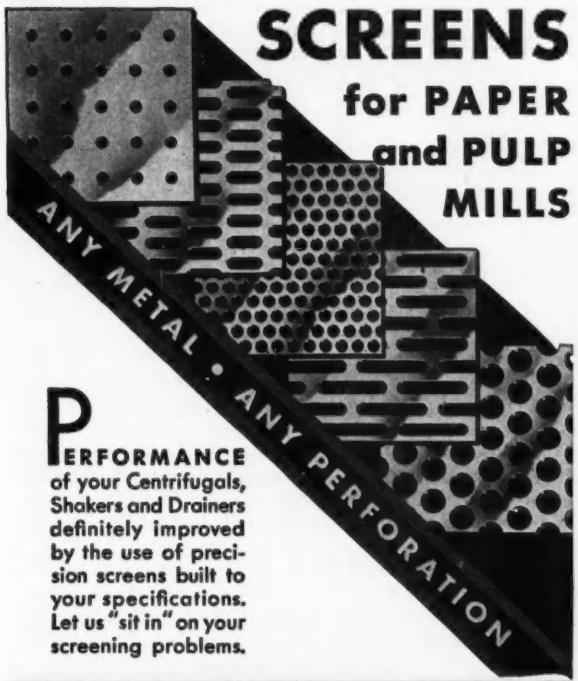
MODEL 102—HIGH SPEED
NOTION BAG MACHINE



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PERFORMANCE of your Centrifugals, Shakers and Drainers definitely improved by the use of precision screens built to your specifications. Let us "sit in" on your screening problems.

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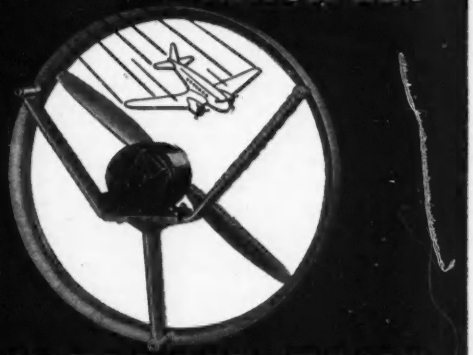
BUILT on ADVANCED *Aero-dynamic* PRINCIPLES



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Brown, Red and Yellow
Iron Oxides
Green Oxides of Chromium

C. K. WILLIAMS & COMPANY
EASTON·PENNSYLVANIA

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, January 6, 1937.

Sentiment in the local paper market regarding the future trend of the industry is decidedly optimistic. Demand for the various grades of paper continues persistent. Sales forces of the leading paper organizations are girding their loins for a strenuous season. The price situation is better.

The newsprint paper market is in a stronger statistical position than for some years past. Production in the United States, Canada and Newfoundland is proceeding at near capacity to take care of current requirements. The recently announced higher prices are now effective.

Trading in the fine paper market is holding up well. Demand for book, cover, bond and ledger papers is well up to average for the season. Tissues are moving in good volume. The coarse paper market is sharing the general improvement. Paper board is only moderately active, due to the inventory period.

Mechanical Pulp

The position of the ground wood pulp market is practically unchanged. Manufacturing operations in North America and abroad are keyed to consumption, in most instances, and there are no undue accumulations at the pulp mills. Quotations on both domestic and foreign mechanical pulp remain firm.

Chemical Pulp

No radical changes transpired in the chemical pulp market during the past week. Demand for the various domestic and imported grades continues brisk and, with offerings decidedly limited, prices are steady to firm. Prime unbleached sulphite pulp is still quoted at from $2.70 to $3.50, on dock, Atlantic ports.

Old Rope and Bagging

The old rope market is exhibiting a stronger undertone than of late. Demand for foreign and domestic old manila rope is fairly active. Old rope prices are steady to firm. The bagging market is displaying strength. Demand for scrap and gunny bagging is holding up well. Roofing bagging is seasonally active.

Rags

Paper mill demand for domestic and foreign rags is well sustained. New and old cotton rags are attracting more interest than usual in the inventory period. No. 1 white shirt cuttings are in excellent request, both for domestic and export account. Some improvement is also noticed in the foreign rag market.

Waste Paper

The local paper stock market is in a stronger position. Board mill demand for the lower grades of waste paper has fallen off temporarily while inventories are being taken. The higher grades of waste paper are steady to firm. White envelope cuttings are now quoted at from 2.70 to 2.80, f.o.b. New York.

Twine

Steadiness prevails in the local twine market. While demand for the various varieties has fallen off slightly since the holidays, every confidence is expressed of another good year in 1937. Recently advanced quotations on both hard and soft fiber twines are being maintained, without difficulty.

OUTLOOK FOR CANADIAN NEWSPRINT

(Continued from page 20)

"You, on your part, are to procure and deliver to me corresponding undertakings towards Price Bros. & Co., Ltd., signed by the said Saguenay Power Company, Ltd., Roberval and Saguenay Railway and Saguenay Terminals, Ltd., that they, on their part, will respectively carry out and fulfill the said agreements.

"During the interval between the 31st of December, 1936, and the release of Price Bros. & Co., Ltd., from bankruptcy, I, as trustee, am to be entitled to avail myself of the provisions of these respective contracts.

"This proposal is further made subject to the approval by my counsel of all legal details connected with this proposed transaction.

"This proposal is also made subject to the Bankruptcy Court of the District of Quebec, in due course, granting to me any authorization or direction which may be necessary to empower me to enter into the undertakings of this agreement.

"I enclose you a copy of a letter addressed to me from the Royal Bank of Canada, agreeing to put me in funds to carry out the above arrangement. You may see the original at my office."

Noble & Wood Increases Wages

[FROM OUR REGULAR CORRESPONDENT]

HOOSICK FALLS, N. Y., January 4, 1937.—Announcement is made here by the Noble & Wood Machine Company that starting this week the weekly payroll would be increased approximately 12 per cent. The increase will not be a horizontal raise but will be distributed among the employes according to their respective lengths of service and their value to the company. The increase is made possible through the additional business being received because of the resumption of buying activities by paper mills of the country. The company intends to get back as far and as fast as possible to the pre-depression wage scale of 1929. About 200 employees will benefit by the wage increase.

Goes With Proctor & Schwartz

George E. O'Keeffe has resigned as salesmanager of Filtration Engineers, Inc., Newark, N. J. to become a member of the sales engineering staff of Proctor & Schwartz Company, Philadelphia, effective, January 4, 1937.

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APP-WELD PATENTED SEAMLESS JOINT

APPLETON WIRES ARE *good* WIRES

APPLETON PHOSALOY WIRES

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NEW CALENDERS FOR 1937

NOW is the time to check your finishing equipment and order the new Norwood Calenders you will require for the better business of 1937. Write for complete catalog.

Norwood Engineering Co., Florence, Mass.

"Buffalo" builds *better* non-clogging paper stock pumps!

Write for New Bulletin 953.

Buffalo Pumps, Inc., 443 Broadway, Buffalo, N. Y.

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PULP MILL MACH'Y FINISHING ROOM MACH'Y

— FRICTION CLUTCHES —

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PAPER MILL MACHINERY

Appleton

Felts and Jackets

Appleton Woolen Mills, Appleton, Wisconsin

TRIMBEY MACHINE WORKS

GLENS FALLS, N. Y.

Manufacturers of

WEIGHT REGULATORS

CONSISTENCY REGULATORS

PROPORTIONING AND METERING SYSTEMS

PULP SCREENS—FLOAT VALVES

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, January 6, 1937.

BLANC FIXE.—Conditions in the blanc fixe market are fairly satisfactory. Prices are holding to schedule. The pulp is quoted at from $42.50 to $45 per ton, in bulk; while the powder is selling at from 3½ to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER.—The position of the bleaching powder market is practically unchanged. Contract shipments are moving in normal volume for the season. Prices remain steady. Bleaching powder is quoted at from $2 to $2.25 per 100 pounds, in drums, at works.

CASEIN.—The casein market continues firm. Domestic standard ground is now quoted at 19½ and finely ground at 20 cents; while French and Argentine standard ground are quoted at 19½ finely ground at 20 cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Steadiness prevails in the caustic soda market. The contract movement is well up to average. Solid caustic soda is quoted at from $2.55 to $2.60; while the flake and ground are selling at from $2.95 to $3 per 100 pounds, in drums, at works.

CHINA CLAY.—The china clay market is exhibiting a strong undertone. Prices are holding to schedule. Imported china clay is quoted at from $13 to $21 per ton, ship side; while domestic paper making clay is selling at from $6.50 to $12 per ton, at works.

CHLORINE.—Demand for chlorine is well sustained. The contract movement is fairly heavy. Prices continue steady to firm, with bookings for next year numerous. Chlorine is quoted at from $2.15 to $2.25 per 100 pounds, in car lots, at works.

ROSIN.—The rosin market continues strong. Paper making gum rosin is now quoted at $9.80 and wood rosin at $9.80 per 280 pounds, gross weight, in barrels, at Savannah. Seventy per cent rosin size is selling at $4.12 per 100 pounds, in tank cars, at works.

SALT CAKE.—Trading in the salt cake market is brisk. The contract movement is regular. Salt cake is quoted at from $12 to $13; chrome salt cake at from $11 to $12 per ton, at works; while imported salt cake is selling at from $12 to $13 per ton, ship side.

SODA ASH.—The soda ash market is displaying strength. Shipments against contract are moving freely. Prices generally remain unchanged. Quotations on soda ash, in car lots, at works, are as follows: in bulk, $1.05; in bags, $1.20; and in barrels, $1.50.

STARCH.—Paper mill demand for starch is moderately active. The contract movement is about normal for the season. Prices remain unchanged. Special paper making starch is quoted at $4 per 100 pounds, in bags; and at $4.27 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—The sulphate of alumina market is fairly active. Contract shipments are moving in good volume. Commercial grades are quoted at from $1.35 to $1.60; while iron free is selling at from $2 to $2.25 per 100 pounds, in barrels, at works.

SULPHUR.—The sulphur market is steady. Yearly contracts are quoted at $18 per long ton, in orders of 1,000 tons, or over, and $20 on smaller quantities. On spot and nearby car loads, the quotation is $2 per ton. All quotations are in carlots, at works.

TALC.—Business in the local talc market is fairly active. Demand from the paper mills is routine. Prices remain unchanged. Domestic talc is quoted at from $16 to $18 per ton, at eastern mines; while imported talc is selling at from $23 to $30 per ton, on dock.

Market Quotations

Paper

Rag Content Bond & Ledgers—Delivered Zone 1

	Bonds		Ledgers
100% Rag Ext. No. 1	.36		.37
100% Rag	.29	@	.30
75% Rag	.22	@	.23
65% Rag	.19	@	.20
50% Rag	.15½	@	.16½
25% Rag	.13	@	.14

Sulphite Bond & Ledgers—Delivered Zone 1

	Bonds		Ledgers
No. 1 Sulphite	7.50	@	8.50
No. 2 Sulphite	6.50	@	7.50
No. 3 Sulphite	6.00		7.00
No. 4 Sulphite	5.50		6.50
Book, B Grade, Cased			
S. & S. C.	6.10	@	6.85
S. & S. C. Litho.	6.35	@	7.10
M. F.	5.95	@	6.60
Coated and Enamel	7.15	@	8.00
Coated Litho.	7.15	@	8.00
Tissues—Per Ream			
White No. 1	.82½	@	—
White No. 1 M. G.	.77½	@	—
White No. 1½	.62½	@	—
White No. 2	.60	@	—
Anti-Tarnish M. G.	.67½	@	—
Colored	.80	@	—
Kraft	.67½	@	—
Manila	.60	@	—
Unbleached Toilet	2.60	@	3.30
Bleached Toilet	3.94	@	5.26
Paper Towels			
Unbleached	2.10	@	3.35
Bleached	3.30	@	3.70
Manila			
No. 1 Jute	9.00	@	9.25
No. 2 Jute	7.75	@	8.50
No. 1 Wood	4.00	@	5.25
No. 2 Wood	3.50	@	4.00
Fibre Papers			
No. 1 Fibre	4.25	@	5.50
No. 2 Fibre	4.00	@	4.75

(Delivered New York)

News, per ton			
Roll, contract	42.50	@	—
Sheets	47.50	@	—
Kraft			
No. 1 Northern	4.25	@	4.75
Standard	4.12½	@	4.25
Southern	4.00	@	—
Glazed	4.50	@	—
Striped	4.75	@	—
Boards, per ton			
News	37.50	@	40.00
Chip	37.50	@	40.00
Sgl. Mla. Ll. Chip	50.00	@	52.50
Jute Lined Chip	50.00	@	52.50
Kraft Liners	65.00	@	67.50
White Pat. Coated	60.00	@	62.50
Binders Boards	70.00	@	75.00

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported			
Moist	29.00	@	31.00
Dry	29.00	@	31.00
(Delivered)			
No. 1 Domestic and Canadian	30.00	@	31.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)			
Prime Bleached Sulphite	2.70	@	3.50
Prime Qualities			
Class 1 All Prime Easy Bleaching	2.40	@	2.75
Other Than Easy Bleaching			
Class 2 Higher than Standard	2.40	@	2.70
Class 3 Standard	2.35	@	2.50
Class 4 Lower than Standard	2.30	@	2.35
(On Dock, Atlantic Ports)			
Kraft Bleached	3.25	@	3.75
Kraft Light & Strong	2.30	@	2.60
Kraft No. 1	2.15	@	2.60
Kraft No. 2	2.10	@	2.25
(F.o.b. Pulp Mill)			
Kraft Domestic	1.95	@	2.30
(Delivered)			
Soda Bleached	2.70	@	—

Add 60 cents per short ton, dock charges, for Albany; $2.00 for Lake Ports East and $3.00 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags
(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings			
New White, No. 1	8.00	@	8.25
Silesias No. 1	6.25	@	6.50
New Unbleached	8.25	@	8.50
New Soft Blacks	3.75	@	4.00
Blue Overall	6.75	@	7.00
Fancy	3.00	@	3.25
Washables	2.25	@	2.50
Mixed Khaki Cuttings	3.50	@	3.75
O. D. Khaki Cuttings	4.25	@	4.50

Old Rags

White, No. 1			
Repacked	3.25	@	3.50
Miscellaneous	2.75	@	3.00
White, No. 2			
Repacked	2.25	@	2.50
Miscellaneous	1.75	@	2.00
Thirds and Blues			
Repacked	2.00	@	2.25
Miscellaneous	1.90	@	2.00
Roofing Rags			
No. 1	Nominal		
No. 2	1.65	@	1.70
No. 3 (bagging)	1.50	@	1.55
No. 4	1.50	@	1.60
No. 5A	1.40	@	1.50

Foreign Rags

New Rags

New Dark Cuttings	2.25	@	2.50
New Mixed Cuttings	2.00	@	2.25
New Light Silesias	5.50	@	5.75
Light Flannelettes	5.50	@	5.75
New White Cuttings	7.00	@	7.50
New Light Oxfords	4.00	@	4.50
New Light Prints	3.00	@	3.25

Old Rags

No. 1 White Linens	7.50	@	8.00
No. 2 White Linens	6.50	@	7.00
No. 3 White Linens	4.50	@	5.00
No. 4 White Linens	2.25	@	2.50
No. 1 White Cotton	4.25	@	4.75
No. 2 White Cotton	3.25	@	3.75
No. 3 White Cotton	2.50	@	2.75
No. 4 White Cotton	1.90	@	2.15
Extra Light Prints	2.00	@	2.25
Ord. Light Prints	1.75	@	1.85
Med. Light Prints	1.55	@	1.65
Dutch Blue Cottons	2.25	@	2.50
French Blue Linens	3.50	@	4.00
German Blue Linens	2.50	@	2.75
German Blue Cottons	2.00	@	2.25
Checks and Blues	2.00	@	2.25
Linsey Garments	2.15	@	2.25
Dark Cottons	1.90	@	2.10
Old Shopperies	1.75	@	2.00
New Shopperies	1.75	@	2.00
French Blues	2.25	@	2.50

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1			
Foreign	2.25	@	2.35
Domestic	2.15	@	2.25
Wool Tares, light	1.75	@	1.85
Wool Tares, heavy	2.10	@	2.25
Bright Bagging	1.70	@	1.75
Manila Rope			
Foreign	3.00	@	3.25
Domestic	3.00	@	3.25
Jute Strings	2.75	@	3.00
Sisal Strings	2.60	@	2.75
Mixed Strings	Nominal		

Old Waste Papers

(F. o. b. New York)

Shavings			
White Envelope Cuttings	2.70	@	2.80
Ordinary Hard White No. 1	2.25	@	2.35
Hard White No. 2	2.10	@	2.20
Soft White No. 1	2.00	@	2.10
Flat Stock			
Stitchless	.90	@	.95
Over issue Mag.	.90	@	.95
Solid Flat Book	.80	@	.85
Crumpled No. 1	.60	@	.65
Ledger Stock	1.00	@	1.05
New B. B. Chips	.35	@	.40
Manila			
New Env. Cut	1.85	@	1.95
New Cuttings	1.40	@	1.50
Old Manila			
Compressed bales	1.20	@	1.30
News			
No. 1 White News	1.25	@	1.35
Strictly Overissue	.60	@	.70
Strictly Folded	.50	@	.55
No. 1 Mixed Paper	.45	@	.50

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BLEACHED AND UNBLEACHED KRAFT PULP.

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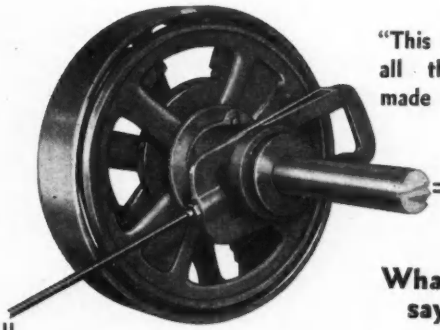
Covington, Virginia
Tyrone, Pennsylvania
Williamsburg, Pennsylvania
Cass, West Virginia



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Will operate indefinitely at any speed between start and maximum. Variable speed motors not necessary. Governors built in clutch will automatically take up speed variations. Used on winders, slitters, embossers, printers, bag machines and similar units.

HUDSON-SHARP MACHINE COMPANY
Green Bay, Wisconsin

Twines

(F. o. b. Mill)

(Soft Fibre)

Coarse Polished—			
India	.14¾	@	.17¼
Belg. White Hemp	.15¾	@	.19¼
India Compress	.15¼	@	.15¾
Fine Polished—			
Fine India	.21	@	.23
Unpolished—			
Box	.10¾	@	.11¼
Paper Makers	.10½	@	.12¾
Tube Rope	.11½	@	.14
Wall Paper	.12½	@	.13¼
Wrapping	.16	@	.20
Soft Fiber Rope	.13¾	@	.14¼

(Hard Fibre)

Bond	.13½	@	.22
Anchor	.13	@	.14½
Manila	.21	@	.28

CHICAGO

Paper

(F. o. b. Mill)

Rag Bond	.12	@	.40
Water Marked Sulphite Bond	.06¾	@	.11
Sulphite Bond	.05½	@	.07¼
Superfine Writing	.18	@	.24
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¼
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07	@	.12
Coated Label	.07	@	.08½
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¼	@	.05¼
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.03¼	@	.03¾
No. 1 Kraft	4.75	@	5.00
Southern Kraft	3.88	@	4.25
No. 2 Kraft	3.88	@	4.25
Wood Tag Boards	.04¼	@	.06½
Sulphite Screenings	.03	@	.03¼
Manila Tissue	.05¾	@	.07
White Tissue	.07	@	.09

(Delivered Central Territory)

News, per ton—			
Rolls, contract	42.00	@	—
Sheets, open	47.00	@	—
Boards, per ton—			
Plain Chip	46.50	@	—
Solid News	50.00	@	—
Manila Lined Chip	55.00	@	—
Patent Coated	65.00	@	—
Container Lined—			
85 Test, per 1000 sq. ft.			1.70
100 Test, per 1000 sq. ft.			1.85

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope Cuttings	1.70	@	2.00
No. 1 Hard White	1.40	@	1.65
No. 1 Soft White	1.25	@	1.50
Ledger & Writings	.60	@	.70
Solid Books	.50	@	.60
Blanks	1.00	@	1.05
Krafts	.80	@	.90
New Kraft Cuts	1.20	@	1.30
Manila Env. Cuts	1.25	@	1.30
Ex. No. 1 Manila	.90	@	1.00
Print Manila	.40	@	.50
Overissue News	.40	@	.45
Old Newspapers—			
No. 1 Folded News	.42½	@	.45
No. 1 Mixed Paper	.25	@	.30
Roofing Stocks—			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper

Rag Content Bond & Ledgers—
Delivered Zone 1

	Bonds	Ledgers
100% Rag Ext. No. 1	.36	.37
100% Rag	.28	.29
75% Rag	.21	.22
65% Rag	.18	.19
50% Rag	.15	.16
25% Rag	.12½	.13½

Sulphite Bond & Ledgers—
Delivered Zone 1

	Bonds	Ledgers
No. 1 Sulphite	7.75	8.75
No. 2 Sulphite	6.75	7.75
No. 3 Sulphite	6.00	7.00
No. 4 Sulphite	5.50	6.50

F.o.b. Mill

Book, M. F.	5.00	@	—
Book, S. S. & C.	5.25	@	—
Book, Coated	6.15	@	—
Coated Lithograph	6.15	@	—
No. 1 Jute Manila	10.50	@	—
Manila Sul., No. 1	6.75	@	—
Manila No. 2	4.25	@	—
No. 1 Kraft	6.00	@	—
Southern Kraft	5.00	@	—
News Print Rolls	40.00	@	—
Straw Board	40.00	@	45.00
News Board	40.00	@	—
Chip Board	37.50	@	—
Wood Pulp Board	70.00	@	85.00
Binder Boards—			
No. 1, per ton	75.00	@	80.00
No. 2, per ton	70.00	@	75.00
Carload lots	65.00	@	70.00
Tarred Felts—			
Regular	52.25	@	54.25
Slaters (per roll)	.84	@	.94

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.08	@	.08½
New White, No. 2	.04½	@	.05
Light Silesias	.05½	@	—
Silesias, No. 1	.04½	@	.05
Black Silesias, soft	.03½	@	.04
New Unbleached	.06	@	—
Washable, No. 1	.02	@	.02½
Blue Overall	.07	@	.07½
Cottons—According to grades—			
Washable, No. 2	.02½	@	.04½
New Blue	.02	@	.02½
Fancy	.03	@	—
New Black Soft	.04	@	.04½
New Light Seconds	.03½	@	.04
New Dark Seconds	2.00	@	2.25
Khaki Cuttings—			
No. 1 O. D.	.04	@	.04½
No. 2 Mixed	.03½	@	.04
Corduroy	.02	@	.02¼
New Canvas	.04	@	.04½
New Black Mixed	.02	@	.02¼

Domestic Rags (Old)

White No. 1—			
Repacked	4.00	@	4.50
Miscellaneous	3.00	@	3.50
Thirds and Blues—			
Miscellaneous	2.00	@	2.25
Repacked	2.50	@	2.75
Black Stockings (Export)	4.50	@	5.00
Roofing Stock—			
Foreign No. 1	2.20	@	2.25
Domestic No. 1	1.50	@	1.60
Domestic No. 2	1.40	@	1.50
Roofing bagging	1.10	@	1.20

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	2.00	@	—
Domestic	2.25	@	—
Manila Rope	2.75	@	—
Sisal Rope	2.25	@	2.35
Mixed Rope	1.00	@	1.10
Scrap Burlaps—			
No. 1	2.25	@	2.50
No. 2	1.00	@	1.10
Wool Tares, heavy	3.25	@	3.50
Mixed Strings	1.00	@	1.10
No. 1 New Light Burlap	3.00	@	3.50
New Burlap Cuttings	2.50	@	2.75

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.30	@	2.40
No. 2 Hard White	2.10	@	2.20
No. 1 Soft White	1.90	@	2.00
No. 2 Soft White	1.40	@	1.45
No. 1 Mixed	—	@	.85
Solid Ledger Stock	1.50	@	1.60
Ledger Stock, white	1.15	@	1.20
Ledger Stock, colored	.85	@	.90
No. 1 Books, heavy	.70	@	.75
Manila Cuttings	1.80	@	1.90
Print Manila	.55	@	.60
Container Manila	.55	@	.60
Kraft Paper	1.10	@	1.20
No. 1 Mixed Paper	.45	@	.50
Straw Board Chip	.40	@	—
Binders Board Chip	.40	@	—
Corrugated Board	.60	@	.65
Overissue News	.70	@	.75
Old Newspapers	.50	@	.55

BOSTON

Paper

Rag Content Bond & Ledgers—
Delivered Zone 1

	Bonds	Ledgers
100% Rag Ext. No. 1	.36	.37
100% Rag	.28	.29
75% Rag	.21	.22
65% Rag	.18	.19
50% Rag	.15	.16
25% Rag	.12½	.13½

Sulphite Bond & Ledgers—
Delivered Zone 1

	Bonds	Ledgers
No. 1 Sulphite	7.50	8.50
No. 2 Sulphite	6.50	7.50
No. 3 Sulphite	6.00	7.00
No. 4 Sulphite	5.50	6.50

F.o.b. Mill

Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.04¼	@	—
No. 2 Kraft	.04¼	@	—

(Delivered New England points)

Southern Kraft	.04	@	—
News Print Rolls	42.00	@	—
Straw Board, rolls	.009	@	35.00
Filled News Board	42.50	@	45.00
Chip Board	40.00	@	42.50
Single Manila Lined Chip	50.00	@	55.00
Single White, Patent Coated News Board (Bender)	60.00	@	65.00
Wood Pulp Board	70.00	@	75.00
Binder Boards (Standard Grade)	70.00	@	—

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.20	@	2.35
No. 1 Soft White	1.85	@	2.15
No. 2 Mixed	.75	@	.80
Solid Ledger Books	1.50	@	1.75
Overissue Ledger Stock	1.15	@	1.30
Mixed Ledgers	.85	@	.90
No. 1 Books, heavy	.80	@	.90
No. 1 Books, light	.50	@	.60
Crumpled Stitchless Book Stock	.50	@	.60
Manila Env. Cuttings	1.50	@	1.60
Manila Env. Cuttings, extra quality	1.75	@	1.85
No. 1 Old Manila	.60	@	.65
White Blank News	1.10	@	1.15
No. 1 Kraft	1.35	@	—
Mixed Papers	.42½	@	.47½
Print Manila	.60	@	.70
Container Manilas	.27½	@	—
Old Newspapers	.50	@	.55
Overissue News	.50	@	.65
Box Board Chips	.40	@	.45
Corrugated Boxes	.50	@	.60
Kraft corrugated boxes	1.05	@	1.10
Screening Wrappers	.55	@	.60

Bagging

(F. o. b. Boston)

Manila Rope—			
Foreign	3.00	@	3.30
Domestic	3.00	@	3.30
Transmission Rope	1.25	@	1.35
Jute Rope	2.12½	@	2.25
Jute Carpet Threads	1.75	@	2.00
Gunny No. 1—			
Foreign	2.25	@	2.35
Domestic	2.00	@	2.10
Bleachery Burlap	4.25	@	4.50
Scrap Burlap—			
Foreign	2.10	@	2.15
Domestic	2.00	@	2.05
Scrap Sisal	2.25	@	2.35
Scrap Sisal for Shredding	2.25	@	2.50
Wool Tares, heavy	2.10	@	2.25
New Burlap Cuttings	2.60	@	2.85
Australian Wool Pouches	2.75	@	3.00
Heavy Baling Bagging	2.25	@	2.65
Paper Mill Bagging	1.75	@	1.80
Bagging No. 2	1.30	@	1.35

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.03½	@	.03¾
New White No. 1	.07¾	@	.08¼
New White No. 2	.05	@	.05½
Silesias No. 1	.06¾	@	.07
New Black Silesias	.04	@	.04¼
Soft Unbleached	.08½	@	.08¾
Blue Chevoit	.07	@	.07¼
Fancy	.03¼	@	.03½
Washable	.02¾	@	.03
Cottons—According to grades—			
Blue Overalls	.06¾	@	.07
New Black, soft	.04	@	.04¼
Khaki Cuttings	.04	@	.04¼
O. D. Khaki	.04½	@	.04¾
Corduroy	.03	@	.03¼
New Canvas	—	@	.0
B.V.D. Cuttings	.08	@	.08¼

Domestic Rags (Old)

(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	—	@	2.75
Miscellaneous	2.50	@	2.75
White No. 2—			
Repacked	1.90	@	2.00
Miscellaneous	2.00	@	2.25
Twos and Blues	1.75	@	2.00
Thirds and Blues—			
Repacked	1.37½	@	1.75
Miscellaneous	1.25	@	1.62½
Black Stockings	3.90	@	4.00
Roofing Stock—			
No. 1	1.75	@	1.80
No. 2	1.65	@	1.70
No. 3	1.30	@	1.35

Foreign Rags

(F. o. b. Boston)

Dark Cottons	2.00	@	2.20
New White Shirt Cuttings	6.50	@	6.75
Dutch Blues	2.25	@	2.50
New Checks & Blues	2.50	@	3.00
Old Fustians	2.25	@	2.35
Old Linsey Garments	2.25	@	2.50
New Silesias	6.00	@	6.50

TORONTO

Paper

Bond—Delivered—			
No. 5 White	.10¾	@	—
No. 6 White	.10	@	—
No. 5 Tints	.11¾	@	—
No. 6 Tints	.10½	@	—
No. 5 Golden Rod	.12¾	@	—
No. 6 Golden Rod	.12	@	—
Ledgers—			
Ledgers, No. 1	.34½	@	—
Ledgers, No. 2	.25½	@	—
Writing	.09	@	.09½
Book—			
No. 1 M. F.	6.50	@	6.75
No. 2 M. F.	6.25	@	6.50
No. 3 M. F.	5.00	@	5.35
No. 1 S. C.	7.00	@	7.50
No. 2 S. C.	6.50	@	7.00
No. 3 S. C.	5.50	@	6.00
No. 1 Coated and Litho	12.00	@	—
No. 2 Coated and Litho	10.50	@	—
No. 3 Coated and Litho	9.50	@	—
Coated tinted	13.00	@	—
Wrapping—delivered—			
Rag Brown	4.75	@	—
White Wrap	3.50	@	—
"B" Manila	4.80	@	—
No. 1 Manila	5.40	@	—
Fiber	5.40	@	—
Kraft, M. F.	5.90	@	—
Kraft, No. 2	5.40	@	—

(F. o. b. Cars Toronto)

News, per ton—			
Rolls (contract)	Nominal		
Sheets	Nominal		

Pulp

Ground wood	27.00	@	—
Unbleached Sulphite	42.00	@	—
Book (Class 1)	58.00	@	—
Writing (Class 2)	59.00	@	—
Select (Class 3)	60.00	@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	2.00	@	2.25
Soft White	1.60	@	1.90
White Blk. News	1.25	@	1.40
Book and Ledger—			
Flat Magazine and Book Stock (old)	.80	@	.90
Light and Crumpled Book Stock	.70	@	.80
Ledgers and Writings	.90	@	1.00
Manilas—			
New Manila Cut	1.20	@	1.40
Printed Manilas	.55	@	—
Kraft	1.00	@	1.60
News and Scrap—			
Strictly Overissue	.55	@	.60
Strictly Folded	.50	@	.55
No. 1 Mixed Paper	.40	@	.45

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.07	@	.08¼
Fancy Shirt Cuttings	.03	@	.03½